DECEMBER, 1951

American Engineer

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IN THIS ISSUE . . .

A Specification for National Security

By General Brehon B. Somervell, USA (Ret.)
President, Koppers Company, Inc.

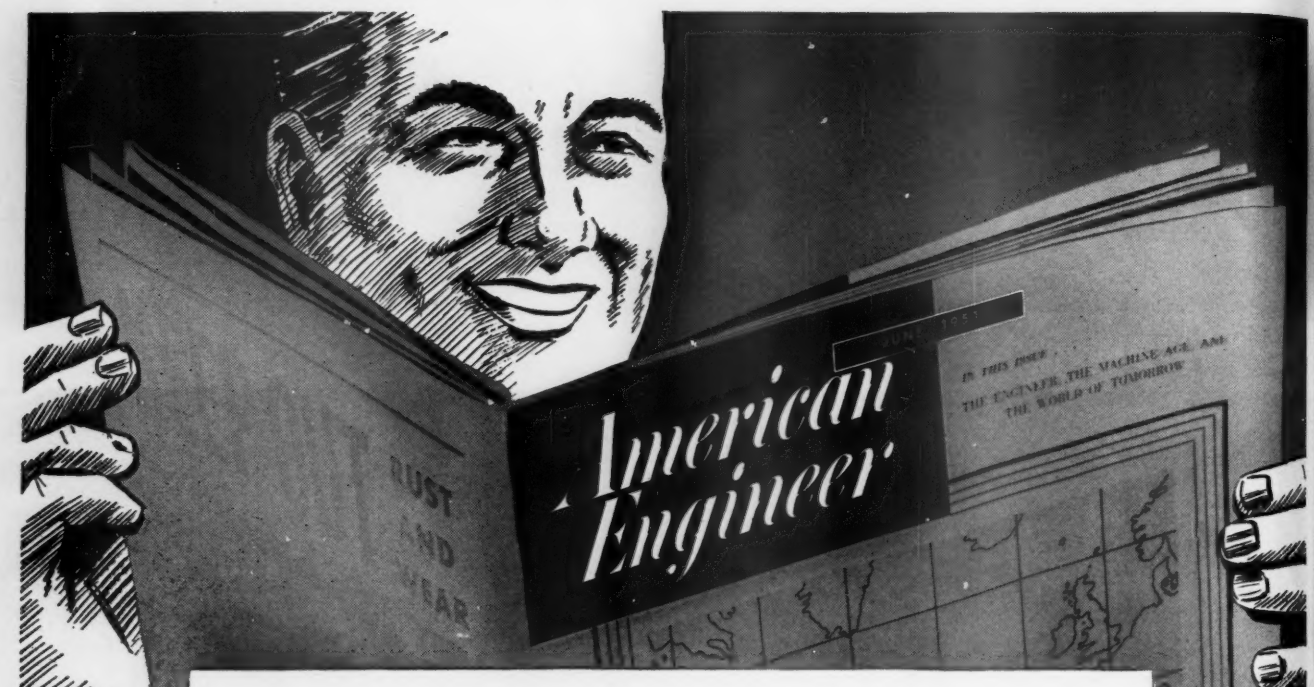
General Somervell, now President, Koppers Co., Helped Direct America's Great War Effort.

. . . and these two articles about the profession

Columbia's New Approach To Engineering Education
By Dean John R. Dunning

Full Report On NSPE's Fall Board Meeting in Kansas City

Season's Greetings



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for the

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in the January Issue

PAUL H. DOUGLAS
Senator from Illinois,

Discussing the Pro,

and

HARRY P. CAIN,
Senator from Washington,

Discussing the Con,

of the

Much talked-about
MISSOURI VALLEY AUTHORITY PROJECT

Of Interest to All Engineers, Don't Miss It In the JANUARY ISSUE

Letters

Who Are Professionals . . .

Dear Editor:

I am writing with reference to a statement on the editorial page of the AMERICAN ENGINEER of October, 1951. It states it takes at least four years to make an engineer out of a high school graduate. I am sorry to see that statement in an engineering publication because we all know that we do not have an engineer at the end of four undergraduate years of preparation.

Part of our difficulty in knowing who is an engineer and who is not an engineer lies in the fact that everyone is thrown into a common type program regardless of their specific objective. I have seen no such studies made, but I expect that a fair proportion of so-called engineering graduates have become technicians and not professional engineers. Also, due to the fact that very few schools of engineering have any particular system of selection, many students enter their engineering studies with a very poor notion of where they are going and in the main have no really clear conception of engineering or perhaps no desire of becoming professional engineers. When we begin to think of professional engineering with the view of more and advanced education, we will begin to indicate a line of demarkation in the professional man and the non-professional man.

We might not want to call a man an engineer who has received his Doctor's degree in engineering and does not yet have practical experience, but he is far closer to that designation than a Bachelor's man can possibly be. I would venture to predict that some time between 25 to 50 years from now, most of our professional engineers will be coming from higher levels of education than the Bachelor's, and that those who stop with the Bachelor's degree will be those who become technicians or enter business.

The editorial points out that we should change many of those who may be engaged in technical work to the professional level. I think the attention to the utilization of engineering services is very much worthwhile, but I wonder whether or not those who are engaged in technical level work may not be technicians in the level of their capabilities also. I think we are doing a disservice to the engineering profession as long as we promote the idea amongst the laymen that an engineer can be prepared in four undergradute years.

R. L. SWEIGERT, P.E.,
Dean, Graduate Division,
Georgia Institute of Technology,
Atlanta, Ga.

Personality . . .

Dear Editor:

"How can engineers, individually, and as a profession, develop a better personality? What do you think?"

Neglecting the second part of the question, it seems as though none will question the desirability of personality individually. Then if the interest is toward the greatest good, let us deal with the great majority of the members. This majority will probably include those who will not take a "Toastmaster's" or a Dale Carnegie course. Thus, this majority will be that group which will have to make the best progress they can from day to day during their normal lives.

The question now becomes: what can such a group, with the aforementioned limitations, do to improve their own personalities? This is not an engineering question; if it were we might consult ourselves as engineers and get a reliable answer. It is closer to a psychological problem; therefore we logically consult a psychologist. The next question is: who is to solicit this information right "from the horse's mouth?" Obviously, if all the professional engineers in the country suddenly converged upon all the available psychologists, they might find themselves being treated for psychosis, and with some justification.

The conclusion is, simply, that a member of the staff of the American Engineer consult with a psychologist of proven ability with the object of writing a feature article on this subject; with such information under our belts, with a better understanding of the problems and procedures, we can then individually get to work on our self-improvement program with reasonable assurance of success.

CARL M. GERLACH, P.E.,
Solon, O.

Dear Editor:

You, your editorial associates, and the contributors to the November 1951 issue of the AMERICAN ENGINEER deserve warm congratulations. I have been heartened in recent years by the swing in the thinking of engineers and engineering groups toward the phil-

(*Continued on page* 6)

American Engineer

DECEMBER
1951

"Engineers build for the future, not merely for the needs of men but for their dreams as well. Thus, inherently, the engineer's work is a fearless optimism that life will go forward, and that the future is worth working for."

—General Dwight D. Eisenhower

A Specification For National Security 8
By General Brehon B. Somervell, USA (Ret.). A prominent NSPE member suggests that America adapt the constructive, factual type of thinking done by engineers in order to solve its problems of internal and international security.

Training On 'Richest Professional Level' Aim of Columbia's New Program 11
By John R. Dunning, Dean of the School of Engineering, Columbia University. Columbia's new Engineering Center will help to combat the engineering shortage and enrich the profession.

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Letters

(*Continued from page* 4)

osophy that the humanities, social sciences and arts deserve more time and attention in the education of men and women, especially engineering students, to become effective citizens.

The articles pertaining to the importance of personality and presentation point to the much-needed emphasis on living and getting along with one another. The discussion of this subject in the November issue is superbly climaxed by the excellent article "Lustre or Glitter?" by Dr. Hannah, President of Michigan State College, which appears on page 20. People generally, and the engineering profession in particular, need more thought-provoking discussion of this kind.

ALLEN D. BRANDT, P.E.,
Bethlehem, Penna.

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The Modest Ones . . .

Dear Editor:

Congratulations on your October AMERICAN ENGINEER. If you can continue in this manner, you should have a magazine that will be bigger, better and more popular than all of the other engineering publications.

The letters to you and your editorial "The Modest Ones" seem to have missed an important point in the recognition of the engineers.

For many years, the Engineers (and Architects, too) have cast envious eyes at the doctors and lawyers, but I have never heard any discussion of what I consider a most monumental difference between the pairs of professions.

Have you ever known a doctor who prepared plans and specifications for the operations on his patient and then recommended that the patient hire a contractor to perform the actual work? Do you know of a lawyer who lets a contractor represent his client in court?

The engineers (and architects) have performed back-stage for many years, yet they seem to feel that they should have the same applause that the audience gives the actual actors on the stage. In our work it is the contractors and builders who are the real actors in the eyes of the average citizens. They are the visible performers of the engineering works and only a small percentage of these average citizens know, understand and appreciate a set of plans, and even less of them can grasp the intent, meaning, or necessity of specifications.

I agree that now is the time for engineers to become familiar to the public, but they must make some radical changes in their ways. Our progress in the past fifteen years, even with our National Society, has been entirely too slow. We are reaping the rewards of this with all the hue and cry about the shortage of engineers. The life of an actor is far more remunerative and exciting than that of the stage hand.

We have, in the past, promulgated laws which will have to be retracted if we assume the role we should have been performing all along, the role of builders, in fact, as well as in absentia. Is there not a bit of absurdity in our customary procedures, where a governing body or business firm, often with engineers already on their payrolls, hires a firm of consulting engineers to prepare plans and specifications and hires another organization to build the structure, when they could just as well select one organization of engineer-contractors, designer-builders, or whatever they are called to design and build the structure under a guarantee that the structure would actually perform the service required for an adequate number of years. The selection could be made on cost and on the soundness of the guarantee.

DON V. PURINGTON, P.E.,
Houston, Tex.

Salary and Shortage . . .

Dear Editor:

We are living in a society in which the law of supply and demand has not yet been repealed by the politicians. On the basis of this premise, no shortage of engineers can be assumed while professional engineers are still being employed at less than a salary of $10,000 per year.

There are those that are assuming the prerogative of suggesting that the youth of the country should enroll in engineering colleges. They should search their soul carefully before they suggest to a young man that he enter a profession that does not hold forth the promise of adequate food and shelter for his family and education for his children.

The concept of increasing the productivity of existing engineers as outlined in the editorial in AMERICAN ENGINEER, dated October, is sound.

(Name omitted by request.)

Dear Editor:

In a recent issue of the AMERICAN ENGINEER you published a letter from Stanley J. Ozimek, P.E., which contained a pair of specious propositions. One of these was that the number of engineers required in this country is dependent upon the number which Russia trains. From conversation with returned engineers who have worked in Russia, I have learned that the Soviets pay their engineers and managers, which they consider mutually equivalent, salaries from ten to twenty times as great as those paid to common factory labor. This would be

(*Continued on page* 32)

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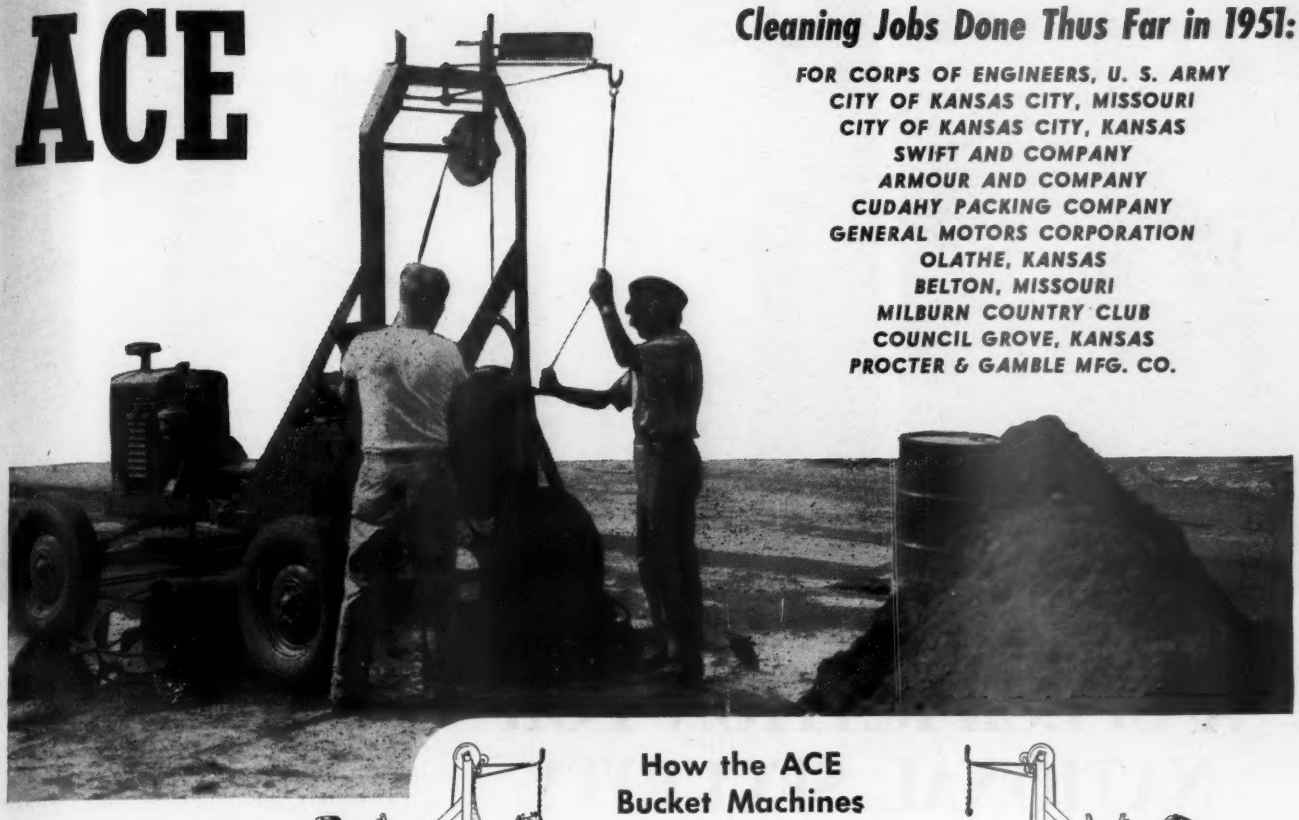

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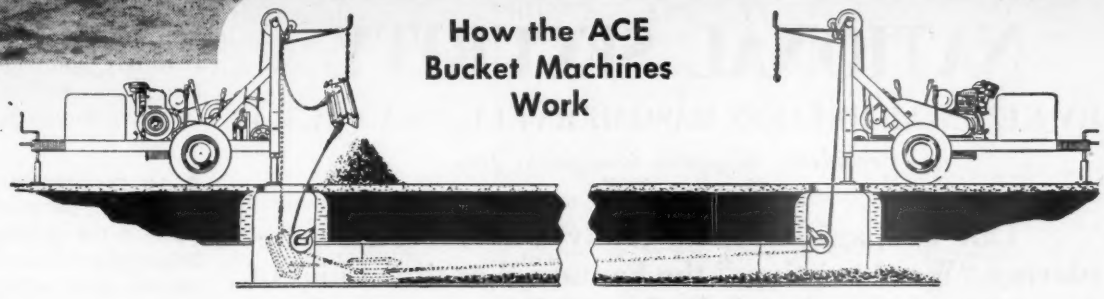

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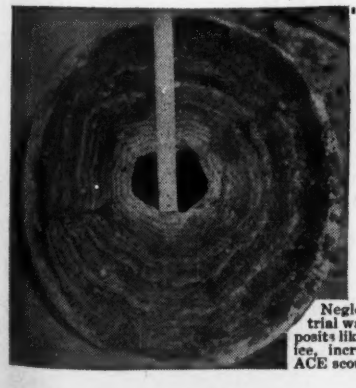

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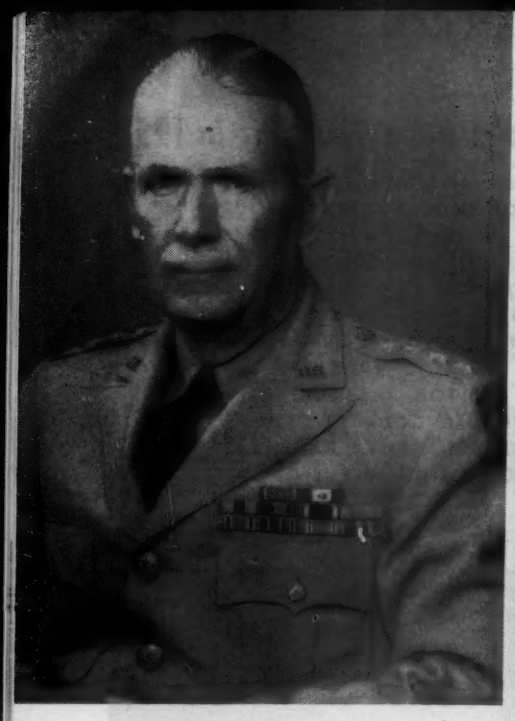


Left: General Somervell, wartime Chief, Army Service Forces. Right: Inspecting an assembly plant in Iran in 1943.

A SPECIFICATION FOR NATIONAL SECURITY

BY GENERAL BREHON B. SOMERVELL, USA (RET.)

President, Koppers Company, Inc.
Member NSPE

Can Propaganda Steal Away Our Liberties? Deploring "Word-twisting," the Famous War-time Chief of Army Supply Services Calls for "A Return to the Engineering Type of Thinking . . . the Realistic, Constructive Thinking That Faces Facts . . . Utilizes Facts Along in Working Out Its Projects."

To engineers must go a large share of the credit for making it possible for humanity to advance from the most primitive living conditions to the present high state of civilization. Most people take our modern conveniences for granted. They rarely stop to consider who developed and built all the wonderful things we now have at our command, things that help us in our daily work and make our lives easier and more enjoyable. Engineers are modest people, who go quietly about their work, mind their own business, and let others do the shouting.

In talking about engineering developments we must, in all fairness, give the scientist his due. Before an engineer can create new materials and build new structures, much painstaking theoretical research has to prepare the way and furnish the data on which his calculations are based, and the calculations themselves follow the rules of the purest of all the sciences, mathematics.

But it is through the adaptations of the sceintific discoveries and theories to the solution of practical problems that the engineers have been able to influence the conditions under which man must live and to create the environment which has made our civilization possible.

It is entirely fitting and proper that the accomplishments of the engineering profession, which have contributed immeasurably to our nation's material progress, should be called to the attention of the American public when the Centennial of Engineering is held in 1952.

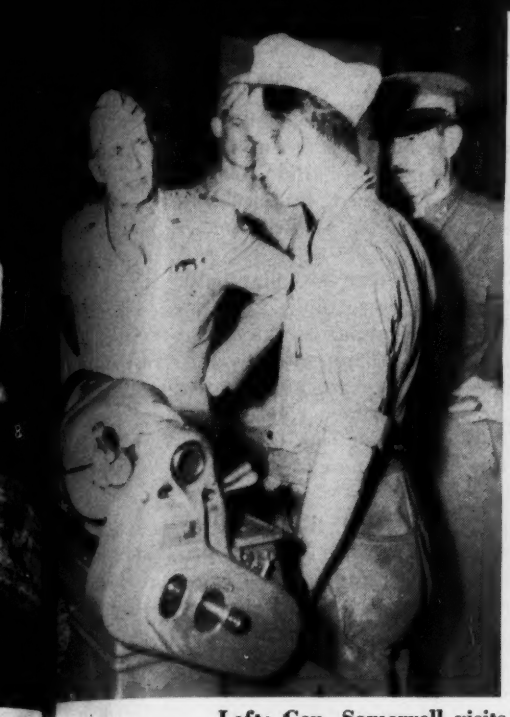
But an engineer's work, like a woman's, is never done. In the troublous years that lie ahead, the nation must continue to look to its engineers for the technical skills and genius that will insure its future expansion and security. As we examine the grave problems that beset our nation and the world, there are times when many despair. We, too, might despair at the prospect of building a better world, were we not engineers. To my mind, the greatest attributes of a good engineer are his willingness to work unceasingly and systematically toward a goal . . . and to cast from his vocabulary the words, "It can't be done."

I AM certain that a saner, sounder, more peaceful world *can* be built. To build it the engineering attributes of knowledge of the facts and a never-give-up spirit will be essential.

I propose to you . . . as a most important *Specification for National Security* the application of the *engineering type of thinking* to the manifold and complex national and international problems that confront us today.

Perhaps engineers can take no great credit for any special ability they may have to think clearly and realistically. Others can do this but engineers have to think that way.

Workers in other fields may have considerable factual latitude in their thinking. They may be able to overlook certain facts . . . or to evaluate facts rather loosely . . . or to mix a good deal of personal opinion with their interpretation of facts . . . BUT NOT THE ENGINEER. The engineer, whatever his field may be, must think with mathematical and scientific precision. He must not fail to include in his thinking and his calculations ALL of the pertinent facts. And he must face and evaluate and apply each fact without bias or prejudice. As you know so well, one little deviation from accurate realistic thinking may result in the failure of a structure or a chemical formulation or a machine or an electrical installation.



Left: Gen. Somervell visits an ordnance unit in the field. Right: With F. D. R. at Casablanca.

These basic truths about the work and thinking of the engineer are so familiar and so often expressed that you may wonder why I see fit to repeat them here. I do so for a definite reason. Familiar as they are, these fundamental facts furnish a basis for comparing this type of thinking, which is so familiar to you, with certain other less effective types that seem to be prevalent in our midst today . . . and to which, I believe, we can attribute many of the difficulties . . . national and international . . . in which we currently find ourselves.

There are many areas in which our national thinking has become fuzzy and distorted . . . where the application of the straight thinking of an engineer is needed urgently.

I need not remind you that Russian pressures are strong today in every phase of our life. In these days almost everything an American citizen does is conditioned or influenced in one way or another, or in some degree, by what the Russians have done, or are doing, or may be expected to do.

Aside from the direct impact of actual warfare in Korea and Indo-China, inspired by Russian Communism and supported by Russian resources, and the enormous drain on our production and resources to prepare for national defense on a world-wide scale . . . plus the massive and increasing inflationary effects stemming in large part from these events . . . Russian influence also is affecting us in subtle but sinister ways fraught with dangerous import.

Somehow or other a good many Americans have adopted, consciously and unconsciously, some of the modes and elements of typical Russian political thinking. They have been caught in today's strong current of pseudoliberalism. Of the various factors that tend to operate in these days against our national security, these people, I believe, constitute an important element. It is an antidote to their kind of thinking that I propose the ENGINEERING TYPE OF THINKING. The only way I know to straighten out crooked and illusionary political and economic thinking is to confront it with the realistic and factual kind of thinking that the engineer characteristically applies to his work.

CONSIDER, very briefly, some of the outstanding and far-reaching achievements of this group over the past thirty years or so. Take as an example, what they have been able to do to some of our traditional American ideas and ideals. Think for a moment of what has happened to some of the basic economic and political concepts and factors upon which our national growth has been built . . . such as . . . CAPITAL . . . CAPITALISM . . . ENTERPRISE . . . PROFITS . . . LIBERTY . . . FREEDOM . . . SECURITY.

These are words whose meanings the word-twisters, in true Russian fashion, have succeeded in degrading . . . in fact, REVERSING in large sections of the public mind.

Down through the history of our country and its wonderful growth, these have been words regarded with high honor and great respect . . . until rather recently. Now many people have been influenced to think of CAPITAL as something definitely on the evil side . . . something that is damaging to the basic interests and welfare of the people as a whole. WE know, of course, that any such concept of Capital is sheer, manufactured illusion. Of all the things that you can think of at this moment, what is there that has been more beneficent . . . more productive of basic prosperity, well-being and security for ALL our people than CAPITAL, the accumulated means of growth. American capital today is saving large and important sections of the world from the worst political and economic ills that can befall nations.

Today, the word ENTERPRISE has come to have a thoroughly distorted meaning in many minds. From a thing of recognized good it has come to connote something that benefits a privileged few. Instead of a creator of capital, national wealth, and greater opportunity for all, enterprise has been reversed to mean something that some people achieve at the expense of others. Here is another dynamic illusion created to deceive many minds.

The word PROFITS has suffered an incredible debasement at the hands of the word-twisters. It has become a word that we hardly dare use. Nowadays . . . to be on the safe side . . . we tend to use the word EARNINGS in our corporate reports. PROFITS need no apologies. Profits can be and have been misused, but no damage caused by misused profits could approach the harm done by the outright destruction of profits, except for themselves, which is the obvious goal of the creators of economic illusions. Today the attack on profits has reached a point where it is better organized and more menacing than ever.

OUR word-twisters have another technique which they utilize today with almost unbelievable success. They take some of the words symbolic of ideals traditionally close to the heart and life of the American citizen and utilize them

as powerful instruments for the moulding of popular opinion. What the American citizen winds up with is generally the opposite of the true meaning of the word and his ideal.

Look at what has happened in our quest for SECURITY. During recent years we have seen the concept of security take on increasing meaning and force in the minds of many people. Historically, of course, there is nothing new about the human struggle for security. Man's pursuit of security is as old as man himself. But in our time it is apparent that the idea of security has assumed a new definition. The basic meaning of the word "SECURITY" embraces something that is altogether good . . . completely desirable. To my mind (and I think you will agree) there is nothing more important . . . nothing more deserving of our effort . . . than the SECURITY of the American citizen and of the American nation.

Nevertheless it is an unfortunate fact that, as commendable ideas gain currency and movement in peoples minds, they become increasingly susceptible to influences that tend to change or confuse or even degrade their original and basic meanings.

The basic and correct concept of SECURITY, for example, is something that benefits EVERYBODY. Security is something that evervone should strive for, everyone should have . . . and that one should achieve through one's own effort and not at the expense of somebody else.

Today, security is being used as a label for a selfish appeal to special groups of our people. For example, in the name of SECURITY and through the expenditure of billions of the money of all taxpayers, the economic planners have given our farmers the doubtful boon of price support for their products. This is giving one group security at the expense of all the others. In a nation capable of feeding its people generously we have artificial scarcity created by the most fantastic economic delusions . . . and our people are paying prices for food that they are less and less able to afford.

Because of similar economic fallacies and policies based on political expediency, the security of other groups is being steadily undermined. The wage earner, benefited temporarily by necessary wage increases to keep pace with the rising cost of living, finds that his gain is illusory. He is paying, of course, for new expansions of bureaucracy, new experiments in socialistic methods and further adventures in the name of a planned economy. Perhaps worst of all is the pursuit of security at the expense of opportunity.

It is, of course, a historical fact that politicians and political groups usually ride to their objectives on great movements and trends in popular thinking. But the ideals that the people have in mind are generally far from what they realize . . . after the politicians have made use of them to achieve their own ends. In fact, what the people get is, oftener than not, the exact opposite of their dreams and hopes. To cite a few outstanding cases. . . .

NAPOLEON, in the name of LIBERTY AND EQUALITY, gave Frenchmen the opposite . . . a dictatorship. Hitler and the Nazis, Mussolini and his Fascists, Stalin and his Communists . . . all rode to power by deliberate distortion or debasement of popular ideals of political and economic freedom.

Instead of the better life . . . instead of the national security that they hoped for and fought for, the German and Italian people achieved crushing defeats, cruel hardships, complete disillusionment.

Today the Russian people still are being victimized by the master propagandists of all time . . . Joe Stalin and his evil gang in the Kremlin. The Soviet leaders have developed political propaganda into an incredibly powerful instrument of political and world power. They have developed it to the point where mere words, with their true meanings distorted or reversed, have produced enormous political tensions and crises in other countries. With mere words they have entrapped the minds of millions of people throughout the world . . . and excited whole peoples to revolution, war and destruction.

Consider the sheer fantasy and the diabolical trickery in the Russian use of the words, "LIBERTY . . . LIBERATION . . . DEMOCRACY . . . FREEDOM."

We all know the paralyzing results when Russia LIBERATES another nation. The people get the opposite of

(*Continued on page* 30)

Left: Gen. Somervell in the field in the South Pacific. Right: The General, now president of the huge Koppers Company, Inc., worked closely with industry during World War II.

Artist's conception of proposed $22,150,000 Columbia University Engineering Center shows main 14-story building fronting on Riverside Drive at 125th Street.

Training On 'Richest Professional Level' Aim of Columbia's New Program

By John R. Dunning

Dean of the School of Engineering, Columbia University

COLUMBIA UNIVERSITY now stands on the threshold of a new program which will undoubtedly have great significance for the free world of the future. This program is the development of the new 22 million dollar Columbia University Engineering Center.

A design for the new Center has been evolved for two reasons: 1. To combat the grave shortage of engineers which threatens to vitiate America's future production; and 2. In order to train engineers on the *richest professional level possible.*

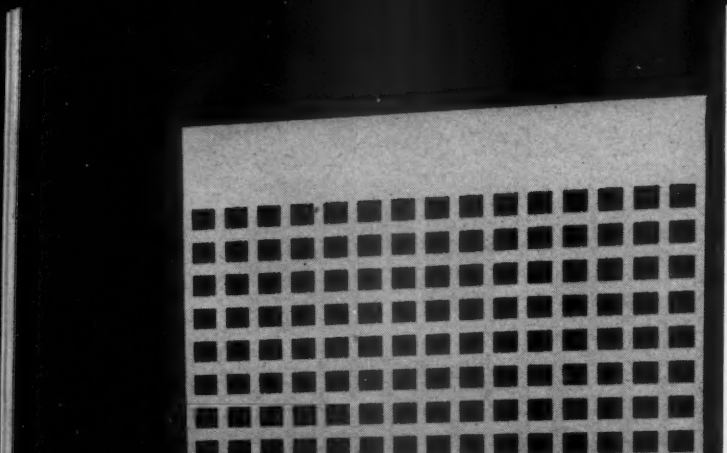
Columbia feels that the professional engineer is vital to our present age since he is not only the first line of America's defense effort, but is also the man who must help to stabilize the world of tomorrow and to raise the standard of living all over the world. *The dynamic quality of the engineer in our present way of life is easily seen. Forty per cent of industrial management is engineer-trained, replacing the banker and lawyer in top industrial posts. Fifty per cent more engineers are in government and industry since the war. By 1955, another fifty per cent increase will be needed.*

The University feels that the continuing complexity of world problems calls for engineers who are not only technologically proficient, but who are also trained in the humanities, and the natural, social and political sciences. In short, the engineer should be trained as a thoughtful, valuable world citizen. A university school of engineering such as the one now in existence at Columbia offers one of the best opportunities for expansion in order to train such fully informed engineers. All the departmental resources of such a large institution can be coordinated with the engineering curriculum in order to develop a well-rounded engineer, and thoughtful selection insures top quality in the student body. Briefly stated, we hope to attain the prescription for engineering education as set forth by Karl T. Compton, that, "to be effective, engineering education must be progressive, for engineering art is not static; it is very dynamic."

Emphasizing the challenge for expanded engineering education today is the rapid growth in our population—an increase of some 2,500,000 each year. By 1960 there may be 175,000,000 Americans. To serve this mounting population there must be an expanding economy. New resources and substitute raw materials must be discovered, marginal resources must be utilized economically, and new processes developed for better production and distribution. Total energy generated must be increased from 60 to 150 horsepower per person within the next decade. Therefore, plans for the new Engineering Center are being laid at a particularly propitious time.

The new Center will combine teaching, research and the basic sciences in an effort to produce informed engineers whose technology is firmly grounded in fundamental science. Designed primarily to expand and vitalize Columbia's School of Engineering, the Center will also include two new and powerful research and teaching arms—an International Institute for Advanced Engineering Science and a Division of Cooperative Engineering Research.

The program of the International Institute for Advanced Engineering Science will call for full-time ad-



Main building (above) of proposed $22,150,000 Engineering Center at Columbia University will front on Riverside Drive at 125th Street. It is hoped that 14-story structure will be ready by 1954, Columbia's Bicentennial anniversary.

vanced post-doctoral study. Engineering research studies will be conducted at the Institute by prominent engineers and scientists from all parts of the world. Routine academic duties will be suspended for Institute members in order to allow them more time for the development of their creative talents. Industry will be invited to send promising workers for advanced training, and the great scientists in industry will be secured for consultation. Various Columbia faculty members will also be available to aid the technologists in analyzing the implications of their studies in political and social science as well as pure science fields.

The new Institute will serve as a kind of catalyst between fundamental scientific research and applied engineering research. Columbia proposes to recruit for this Institute outstanding men comparable to its own Theodore von Karman and Edwin H. Armstrong and others, to build an even stronger group of top-level experts. Thus it hopes to acquire, by cross-stimulation and continued research, the new ideas and new knowledge that can be developed to the ultimate gain of our whole economy.

Another important branch of the new Engineering Center will be the Division of Cooperative Engineering Research. This Division will permit the applied research work of the School of Engineering to be balanced and coordinated on a sustained and efficient basis. It will draw on all university resources for special applied research in fields such as nuclear technology, petroleum, communications and electronics, biochemical technology and industrial management. The Division will include numerous special research projects, all concerned with developing and applying new methods and techniques, thereby reducing production costs and benefiting private industry and the individual consumer.

The Division of Cooperative Engineering Research will be international in scope, and will extend help to the world's free nations in the spirit of the Point Four program, by sending back engineers with first-hand experience in democracy.

Hard core of the Engineering Center design, the School of Engineering will bring many benefits to the Center. Its faculty is made up of prominent teachers and research scientists who have made important contributions to the solution of both practical and theoretical problems.

Of equal value is the body of mature engineering students Columbia attracts. Much of the School's reputation as a progressive influence in engineering education can be traced to this excellent student body.

Overcoming the hindrances of crowded, outdated and ill-ventilated facilities, the School of Engineering has built a proud record of achievement in its undergraduate, graduate and post-doctoral curricula. At the present time some 1,100 students are studying in the School, including some 300 undergraduates (comprised of juniors and seniors only), and 800 graduate students. It is proposed to increase the enrollment to 750 undergraduates and to 1,000 graduate students. But the Engineering Center, like the present School, will always stress quality.

Columbia is particularly proud of the fact that many students now matriculating are "men-in-industry," men already working in the profession who are improving their skills in their free time or on leaves of absence from their companies. The number of scholarships donated by industry is constantly increasing.

The School of Engineering includes seven departments: The School of Mines (mother department of the School of Engineering); and the Departments of Civil Engineering; Electrical Engineering; Mechanical Engineering; Graphics, designed to develop a student's ability to express his ideas in graphic form and to interpret the ideas of others; Chemical Engineering; and Industrial Engineering and Management.

The School of Engineering has long been a pioneer in the field of engineering education and it forms a firm base for the future establishment of the Engineering Center. For example, the first engineering school on an American liberal arts campus was established at Columbia in 1864 as the School of Mines. In addition, Columbia was an early introducer of soil mechanics, a pioneer promoter of analysis by electrical analogy and a leader in establishing a regular course in nuclear technology.

Unique in the world today, the powerful triumvirate of teaching and research agencies within the Engineering Center will at the same time enjoy the full advantages which the School of Engineering has had since its founding, and gives greater meaning to the aims which have dominated the School for nearly nine decades. These aims are:

1. To maintain a program of education founded on the principles that understanding of all branches of engineering is requisite to specialization; that familiarity with pure science and the humanities is a necessary base for the rounded man and that appreciation of the engineers' responsibilities as a professional man and a citizen is mandatory.

2. To assemble an unsurpassed faculty of engineering scientists from all over the world.

3. To attract exceptionally qualified students.

4. To invigorate the teaching program with the fruits of research in both engineering and abstract sciences.

5. To produce expert professional practitioners and men qualified to pioneer on the frontiers of knowledge.

6. To develop inspired teachers for future generations.
7. To train graduate engineers, already in industry, to meet the expanding opportunities for industrial leadership.
8. To hold high the profession's ultimate goal—the advancement of society and the health, welfare, and comfort of all the people.

Both for purposes of professional training and scientific investigation, the Engineering Center will operate in closest coordination with Columbia's outstanding departments of pure science, the social and political sciences, and the humanities. It will also have ready access to such other University resources as the Medical Center, Teachers College and the Graduate School of Business Administration.

These university advantages, besides assuring broad academic opportunities for students, are expected to attract world scholars and scientists for advanced studies and research and as members of the Engineering Center's expanding faculty.

Comparable in its broad purposes to the Medical Center concept pioneered by Columbia in the late 'twenties, the Engineering Center will have the "engineer-scientist" as its educational goal. The "engineer-scientist," as Columbia planners see him, is a man possessing not only the highest training in engineering technology but also a profound knowledge of the fundamental sciences essential to solution of the increasingly complex problems facing the modern engineer.

The Engineering Center will be established at Riverside Drive and 125th Street. The first unit, an existing four-story building, has been acquired and is now being remodeled and occupied as it becomes ready. The second unit, a building of some 250,000 square feet, rising 14 stories above the Drive, will be erected as soon as funds are available, the aim being completion no later than 1954, the University's bicentennial anniversary. The two buildings will more than double the present space available at Columbia for engineering training, and the Center will have a staff of 267 professors, assistants and research workers, compared with a present staff of 142.

Concomitantly with plans for the Center, Columbia this September inaugurated a plan for liberal education in engineering. Sixteen selected liberal arts colleges have entered into an agreement with Columbia's School of Engineering to provide this unusual opportunity for professionally training engineers. Under this plan, a prospective engineering student may study three years at one of the cooperating liberal arts colleges and two years at Columbia. Upon the satisfactory completion of three years of study at one of the twelve liberal arts colleges, the student will be automatically admitted to Columbia's School of Engineering for two years of engineering study. Completion of the five year program will result in appropriate Bachelor's degrees from both Columbia and the liberal arts colleges.

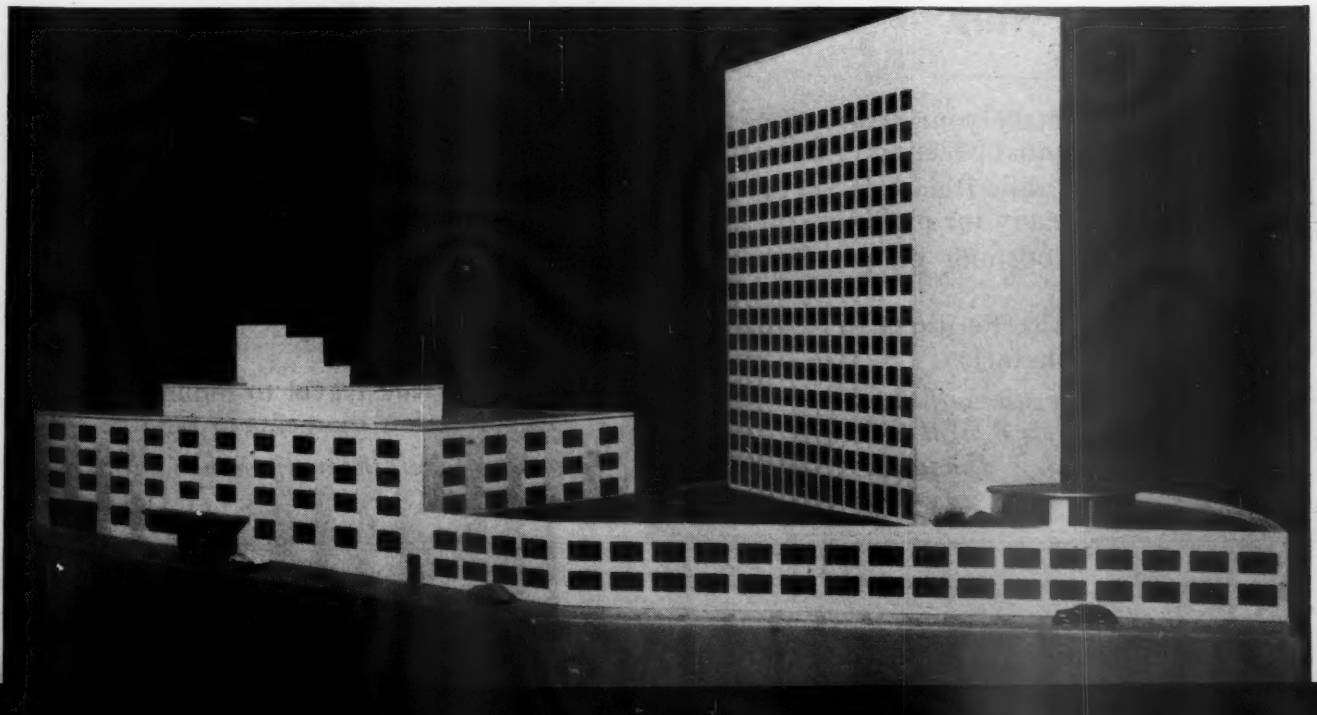
Though the Columbia School of Engineering has long insisted on a strong background of liberal arts education, this program of combined education has been extended in order to help meet the country's need for more broadly trained engineers. Through the five-year program, engineering students will receive a proven combination of liberal arts and physical sciences necessary for professional men in modern society.

The colleges that have entered into the agreement with Columbia are Allegheny College, Meadville, Pa.; Baldwin-Wallace College, Berea, Ohio; Franklin and Marshall College, Lancaster, Pa.; Hobart and William Smith Colleges, Geneva, N. Y.; Hofstra College, Hempstead, N. Y.; Juniata College, Huntingdon, Pa.; Marietta College, Marietta, Ohio; Miami University, Oxford, Ohio; Middlebury College, Middlebury, Vt.; Queens College, Flushing, N. Y.; St. Lawrence University, Canton, N. Y.; Alfred University, Alfred, New York; Bowdoin College, Brunswick, Maine; Centre College, Danville, Kentucky; Wesleyan University, Middletown, Connecticut; and Washington and Lee University, Lexington, Va.

Columbia is embarking on its new program of expansion with the feeling that engineering can be a force for lasting peace by advancing the standard of living for our own and the world's growing populations. For problems of production and distribution underly economic difficulties, which in turn are inseparable from the world's political tensions. As man's fundamental wants are fulfilled through engineering, a basic cause of international strife will vanish.

With these problems and opportunities facing the engineering profession, our educational philosophy must be dominated by the realization that civilization demands engineer-scientists who are also philosophers and humanitarians with a broad vision of world statesmanship. Their technology must be firmly grounded in fundamental science. They must be equipped to take dynamic leadership in community, national and international affairs.

View of model of proposed $22,150,000 Engineering Center at Columbia University shows main 14-story building (right) on Riverside Drive and smaller building which fronts on 125th Street (left).



Ye Professional Engineers' Almanac

January

Remarkable days . . .

1. NSPE Fiscal Year begins. Time to pay dues.
   Ballots mailed out for 1952-53 officers.
   Time to make resolutions for more active Chapter and State meetings and pledge greater participation in community affairs.
15. Public Relations Survey Report will be ready for mailing.
22. Deadline for returning 1952-53 ballots.

"Let us then be up and doing
With a heart for any fate."
Longfellow

STONE: Garnet

February

Remarkable days . . .

14. Saint Valentine's Day. Be sure to "engineer" some way of conveying your affection to your lady fair.
17-23. National Engineers' Week. A time for general observance throughout America, as the country pays tribute to the professional engineer.
22. George Washington's Birthday. A legal holiday to honor the Father of His Country, who was also an engineer.

"Be not the last to try the new nor yet the first to lay aside the old."

STONE: Pearl

March

Remarkable days . . .

14 & 15. State Presidents' Conference. Statler Hotel. Cleveland, Ohio.
15. On this day you can relax
    If you've filed your income tax.
30. Today is a good day to remember that Jupiter is the ruling planet for 1952. Jupiter represents leadership, integrity and strength. Let Jupiter's influence help you take an active part in your community's activities throughout the year.
31. Weather prediction: March will go out like a lion or a lamb.

"Courage and strength in times of danger."

STONE: Bloodstone

April

Remarkable days . . .

1. All Fools' Day.
4. Date of Paul Revere's famous ride "through every Middlesex village and farm."
13. Easter Sunday.
24. Lay in a store of fine ideas, and sow a particularly interesting Chapter program. Heightened membership interest should be ready for harvesting at the close of your next meeting.

"In the spring a P. E.'s fancy
Lightly turns to thoughts of trout."

STONE: Diamond

May

Remarkable days . . .

10. Be sure and make your reservations for the NSPE Annual Meeting in Tulsa.
15. The Second Public Relations Survey Report will be ready for mailing.
24. Date of the opening of the Brooklyn Bridge in 1883.
30. The day of Saint Ferdinand III, the patron saint of engineers.

"The man who lives for self alone
Lives for the meanest mortal known."
Joaquin Miller

STONE: Emerald

June

Remarkable days . . .

1. Before your members get away for the summer, plan at least one get-to-gether to be held before fall. Out of sight, out of mind: don't lose YOUR members.
5, 6 and 7. Annual Meeting of the National Society of Professional Engineers, Tulsa, Oklahoma.
14. Flag Day.
20. Whether you travel to mountains or sea
    Devote a few moments to NSPE.

"It is easier to tell the truth than to admit a lie."

STONE: Agate

the Year of Our Lord 1952

July

Remarkable days . . .

1. The beginning of the 1952-53 NSPE Administrative Year.
   New NSPE President takes office.
4. Independence Day. Take a professional "time out" to enjoy picnics, fireworks and fun. Approach orators at your own risk on this day.
10. What a day to invite that new professional engineer friend of yours over for a long cooling drink. Give him a moment to relax before you tell him all the advantages of belonging to your Chapter.

"To freemen, threats are impotent,"
Cicero

STONE: Ruby

August

Remarkable days . . .

1-31. An excellent vacation-time.

16. Every day is a good day to work for a better profession.

17. Not to interrupt your vacation, but while you're sitting in that boat, enjoying peace and solitude, how about giving your Professional Society a little thought. Get at least one good idea for a Chapter meeting to present at your group's first gathering.

"Shame arises from the fear of men, conscience from the fear of God." Samuel Johnson.

STONE: Sardonyx

September

Remarkable days . . .

1. Labor Day.

3, 13. Centennial of Engineering Convocation in Chicago, Ill. NSPE will hold General Meeting during this time.

15. Time to begin planning Engineers' Week activities for 1953.

30. The fall season is in full swing. Make this a banner year for your Chapter.

"Idle hands are the Devil's workshop."

STONE: Sapphire

October

Remarkable days . . .

20. All State Societies notified of the list of nominees for 1953-54 NSPE offices.

26. A good day to take the family to church, then go autumn-walking in the afternoon.

31. All Souls' Day. While dressing up for Halloween, remember to keep "dressing up" Chapter programs with interesting subjects.

"And close at hand, the basket stood
With nuts from brown October's wood."
Whittier

STONE: Opal

November

Remarkable days . . .

1. Nominations of NSPE officers for 1953-54 announced in the pages of the AMERICAN ENGINEER.

4. National Election Day. Be sure you have a hand in choosing our next President.

7 & 8. Fall Board of Directors Meeting.

27. Thanksgiving.

"Praise God from Whom all blessings flow."
Doxology

STONE: Topaz

December

Remarkable days . . .

10. Deadline for submitting additional NSPE nominations by petition.

24. "Everywhere, everywhere, Christmas tonight."

25. Christmas Day.

31. Ballots mailed out for 1953-54 NSPE offices.

"God rest ye merry, gentlemen."
Traditional.

STONE: Turquoise

NSPE President L. L. Dresser, Tulsa, Okla., Presided Over Recent Board Meeting.

The Special Public Relations Program, Vital National and State Legislation, National Engineers' Week, and Many Other Professionl Subjects Hold Limelight At Kansas City Conference

DIRECTORS FROM NSPE'S STATE SOCIETIES HOLD FALL BOARD MEET

AT AN interest-filled fall Board of Directors meeting held November 9 and 10, in Kansas City, Mo., decisive action was taken by the more than 50 representatives from the State Societies, on major problems facing the engineering profession today.

The NSPE's top governing body, presided over by President L. L. Dresser of Tulsa, Okla., took the following outstanding actions:

- Approved a reworded Statement on Competitive Bidding. (*See below.*)
- Reaffirmed the necessity of making Engineers' Week, 1952, an outstanding promotional event.
- Noted with pleasure that the American Institute of Architects has appointed a committee to be the counterpart of NSPE's Interprofessional Relations Committee, the two groups to consider jointly problems of mutual concern.
- Expressed itself in favor of a Professional Engineering and Scientific Manpower Board to improve utilization of Professional Engineers in National Defense.
- Approved the results of the Society's special Public Relations Program thus far.

Here, In Detail, Are the Highlights of the Kansas City Meeting . . .

Engineers' Week, 1952 . . .

Plans are underway to make National Engineers' Week an outstanding promotion, reaching into every state in the nation. Commitments have been received from advertisers to give the activity publicity over nation-wide radio and television networks, and in national magazines such as *Time* and *Newsweek*. Chapters and state societies are cooperating with their local communities, industrialists and the press, to direct the public's attention toward the professional engineer during the observance to be held February 17-23, 1952.

Ethical Practices . . .

The following statement opposing competitive bidding for professional services was approved:

1) The Practice of Engineering is a learned profession, requiring of its members sound technical training, broad experience, personal ability, honesty and integrity. The selection of engineering services by an evaluation of these qualities should be the basis of comparison rather than competitive bids.

2) Competition between engineers for employment on the basis of professional fees or charges is considered unethical practice by all professional engineering groups. Hence, the announced intent of an Owner or Governmental Body to request such competitive bids removes from consideration many engineers who may be the best qualified to be entrusted with the proposed work.

3) Since the securing of competitive bids for professional engineering services is not in the best public interest and as such procedure frequently results in the awarding of the work to other than the best qualified engineers, the National Society of Professional Engineers does now and herein express itself as opposed to competitive bidding for professional engineering services and of favoring the practice of negotiating of contracts in all cases where it may be necessary or desirable to consider the services of more than one engineering consultant or organization.

Interprofessional Relations . . .

The exchange of speakers of representatives of the architectural, legal, medical and dental professions was recommended, to be effective at the state, local and national levels. The Committee reports that the American Institute of Architects, has appointed a committee to be the counterpart of the NSPE's Interprofessional Relations Committee and that joint consideration of mutual problems will be undertaken in the near future.

Legislative Committee Report . . .

The Committee reported action taken on the following legislative subjects:

U. S. Public Health Service (Senate, 1320). The Society pointed out to the Senate Subcommittee on Health in testimony presented October 11, 1951, that the responsibilities of the U.S.P.H.S. engineering personnel were so extensive and vital that the Chief Sanitary Engineer officer was deserving of similar statutory recognition as that accorded the Chief Dental Officer of the Service; that is, having rank and pay equated with the Dental Officer appointed as Assistant Surgeon General of the Army, a Major General.

Salary Stabilization. NSPE explored with the Senate Finance and Banking Committees the problem of inequities in salary regulations as they affect professional engineers. The Salary Stabilization Board is sympathetic and is now studying a practical solution short of legislation. It has assured the Committee that a regulation would be issued within the next few weeks which, it was hoped, would resolve the problem at least for Engineers in private practice. Since the whole matter of salary stabilization is so complex, being in many cases compromises among related and inter-woven industry and commerce standards of pay, it is likely that several weeks may pass before the appearance of evidence of an appropriate regulation.

Armed Forces Reserve Act of 1951 (House Bill 5277). The Society is attempting to have the professional provisions of the Army Reorganization Act written into this proposed legislation. The Society presented a statement with respect to the effective utilization of engineering and scientific manpower. *(See also below.)*

Air Force Organization Bill. The Society endeavored to have professional provisions written into this Bill. *(See also below.)*

Individual Retirement Plan. This Bill would make it possible for those whose income is derived from a private practice, to set aside an amount each year toward retirement which would be tax-free until retirement payments are made. The Society has supported this proposed legislation.

National Defense . . .

Recommendations were made that NSPE present to Congress its opposition to the professional engineer deficiencies in the Air Force Organization Act of 1951, the Officer Personnel Act of 1947, the Army Organization Act of 1950 and that provision for appropriate use of professional engineers be included in the proposed Armed Forces Reserve Act of 1951. The Society again expressed itself in favor of the establishment of an appropriate Professional Engineering and Scientific Manpower Board with authority to develop and administer policies for the effective use of Professional Engineers, Engineers-in-Training, scientists, etc., in the military and civil phases of National Defense.

Chapter Activities . . .

Results of a survey inquiring how the Committee could best serve chapter officers were reported. The Committee reported it is planning a more extensive study on a trial basis in one state to secure indications of chapter interests.

Young Engineers . . .

A two-part questionnaire is being planned for transmission to members on the roster of volunteer counselors set up last year. The first part will consist of a postal card to determine the extent, if any, to which the member performed counseling service. A detailed questionnaire will be sent to those who did perform counseling service. It will seek ways and means of improving such service.

The Committee is studying the possibility of pooling information about effective Young Engineer programs evolved by the various chapters.

Public Relations . . .

The first of a series of four industrial research studies designed to acquaint top management of industry with the value of employing registered, professional engineers, and to learn answers to problems posed by our complex industrial economy, has already been undertaken.

The first questionnaire: "How to Improve Engineering-Management Communication" has been mailed out and several hundred questionnaires have already been returned. Plans for publicizing the report to be written based on the survey are well underway.

Publications Committee . . .

Various proposals for increasing the revenue from advertising in the AMERICAN ENGINEER were considered. Proposals that members in local chapters urge persons desiring to reach influential engineering personnel to use the AMERICAN ENGINEER as an advertising medium were advanced.

Budget Committee . . .

Chairman T. Carr Forrest of the Budget Committee, presented a budget of $174,000,000. The budget includes allocation of funds for the continuation of the Society's major activities. The hope was expressed that increased membership will permit the development of an expanded program in the future.

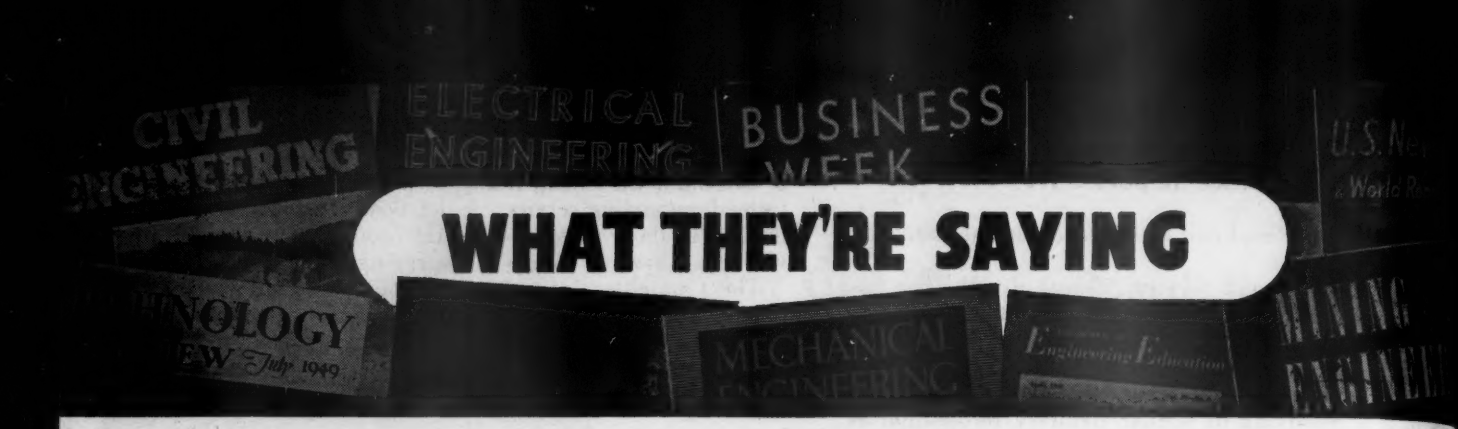
Western Chapter, Missouri SPEs, Is Excellent Host To Visiting Board Members

HOST to the National Directors was the Western Chapter, Missouri Society of Professional Engineers, Garvin Dyer, Chairman. Besides making extensive arrangements for the business meetings, the group sponsored the social events. At the noon luncheon on November 9, Mr. L. W. McLeod, Vice President, Westinghouse Electric Corp., spoke on "The Southwest—Land of Rich Rewards."

That evening a cocktail hour was held, and later a banquet became the center of festivities. With NSPE Vice President C. G. Roush as toastmaster, the visitors heard Chancellor Franklin D. Murphy of the University of Kansas deliver an outstanding address.

The November 10 luncheon featured an address by Mr. Randall Jessee, of television station WDAF. Mr. Jessee spoke on and showed films dealing with the great flood of July, 1951. The rarely seen first-hand pictures were of great interest to the group because of the many engineering implications involved in repair work and the like.

Members of the Western Chapter's Arrangements Committee were: Mr. C. Myron Lytle, Chairman; and as members, Messrs. Yale Witschner, A. C. Kirkwood, C. G. Roush, William Riddle, S. H. Pollack, T. Lewis Jones. Mrs. C. Myron Lytle, headed the Ladies' Arrangements Committee.



WHAT THEY'RE SAYING

TYING THE PROFESSION TO PUBLIC POSTS

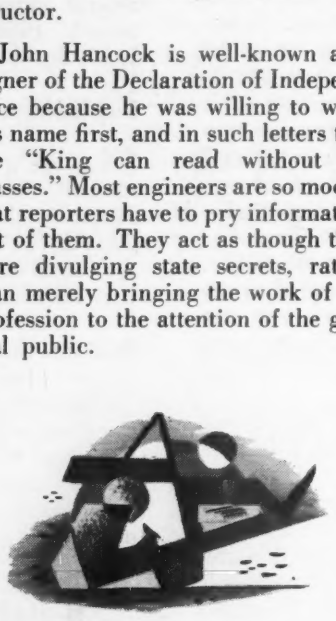
In every city and community there are public works, building codes, transportation problems, safety controls, city planning and zoning, and a host of other matters that need technical study from the viewpoint of the citizen rather than from that of the specialist. Engineers who are civic minded should take an active part in these deliberations. They do not need to be specialists in a particular field; their technical background enables them to make a vital contribution to the work of such bodies. Many civic activities introduce human as well as technical problems. Such problems often call for non-technical formulas for their solution—formulas based on give and take, and sound common sense.

Edmund Burke said, "All government — indeed, every human benefit and enjoyment, every virtue and every prudent act—is founded on compromise and barter." We engineers have difficulty in believing that compromise is needed, let alone barter. Our training and experience condition us to seek rigid solutions rather than flexible and elastic expedients.

Engineers are rarely elected to public office. In our city we have recommended an engineer for more than one public post and always without success. It is not enough to put an engineer in the running with the rest of the candidates. The sponsoring group must be willing to work for him as Bill Jones or Robert Smith, whose engineering ability is a special qualification. Many openings that could have been filled by an engineer to the advantage of all concerned, have been filled by others because the engineers did not get behind their candidate as an individual and sell him personally to the electorate.

Too often the public thinks of engineering as a mysterious activity, too complicated for general understanding. Some engineers have promoted this attitude to the disadvantage of the profession. Most engineering is the application of very simple laws and techniques to elementary or complicated problems. Laymen generally are unfamiliar with these simple laws. Engineers should show the public the real nature of their activities and see to it that the public understands the functions of the designer and the constructor.

John Hancock is well-known as a signer of the Declaration of Independence because he was willing to write his name first, and in such letters that the "King can read without his glasses." Most engineers are so modest that reporters have to pry information out of them. They act as though they were divulging state secrets, rather than merely bringing the work of the profession to the attention of the general public.



The engineer has perhaps misread the article of his code of ethics which states that "He will not advertise himself in a self-laudatory manner" to mean that he will not advertise himself at all. There is a need for articles telling about engineers and their works, for short or long biographies showing what engineers have done for the community and the nation.

We cannot hide our light under a bushel and expect public appreciation. How can we serve unless we are called? How can we be called unless we be known? — *N. W. Doughtery, Dean of Engineering, University of Tennessee, Civil Engineering, October, 1951.*

TRIBUTES FROM *THE TIMES*

Even at the close of the last century a medical college consisted of a comparatively small building in which a few professors lectured on what was then known of medicine and surgery. The present century was scarcely twenty-five years old when it became evident that many laboratories, schools and special hospitals would have to be coordinated into what we now call a medical center if medicine was to be taught competently.

Columbia University was the first institution to create such a center. Now it pioneers again along similar lines, but with the object of raising engineering to a new high level. The sum of $22,150,000 is to be raised to put the program into effect, which means that the Engineering Center deserves to be regarded as a university in its own right. What Columbia contemplates is a union of teaching, research and the fundamental sciences. All the resources of the university will be tapped, so that the students at all levels will listen to professors who are leaders in the physical as well as in the social and political sciences and the humanities.

The time has passed when the engineer is to be regarded merely as a builder of bridges, a designer of machinery. The honors once paid to the empirical inventor are now his, for the simple reason that the application of the new discoveries in physics, especially electronics, and in theoretical chemistry are beyond the grasp of the practical Yankee whittler. Social scientists at least think of the engineer as an integral part of our economy—think of him as the man to whom we must look if we are to meet the demands of expanding production and if we are not only to maintain but to raise a standard of living which is the highest the world has ever known.

The story is told of two bricklayers who were asked, "What are you doing?" by a curious observer. "I'm laying bricks," said one. "I'm building a cathedral," said the other. So will it be with graduates of the new Engineering Center. They will learn to think of themselves not only as manipulators of metal, pourers of concrete, designers of turbines, but as the creators of a more wondrous United States.

Editorial *New York Times*
November 9, 1951

ATOMS AND MAGIC

Along with scientists, engineers are the key men of atomic energy development. Without engineers, we couldn't reach our objectives. The close working relationship, between research and development in modern industry, has brought about a situation where about half our technical workers are engineers, and half are scientists. As for the governmental management of the enterprise, it is drawn in the main from the engineering profession. It is worth noting that the General Manager and the Deputy and Assistant General Managers are engineers; each of the ten Managers of Operations is an engineer; and two of the five Commissioners were trained as engineers. The engineering viewpoint and approach bulk large both in making atomic energy policy and conducting day-to-day atomic energy operations. Approximately 6,400 engineers were employed in the program last June 30.

And now let me discuss just for a moment an item of very considerable importance to the future welfare of this nation. In the atomic energy business we are smack up against the shortage of trained engineers and scientists. This is a tale of woe which must be all too familiar to the men in this audience.

While we may blame the statisticians for misreading the trend or giving too much weight to temporary decreases in demand, we must blame ourselves, in my opinion, for our inability to realize that the most precious ingredient in any product is the manpower that conceives, designs, manufactures and distributes it. In each of these vital steps the engineer is to be found in increasing numbers and yet we as industrialists and employers will invest more money on specialized materials for new processes than we will on specialized and well-trained manpower. We stockpile raw materials, but expect that good men will be educated and available through some magic process or other without effort or interest on our part. —*T. Keith Glennan, Commissioner, United States Atomic Energy Commission. Address given before the Fall Meeting of the A.I.E.E., October 23, 1951.*

THE MAGNIFICENT OPPORTUNITY

In this year of the full maturity of engineering, we look back on 100 years during which our profession has played its full part in the development of our country; we have held decisive roles in every war; we have been pioneers, leaders and inventors in all fields of production and national development for the improved living standards and greater comfort of our fellow men; and particularly in recent years, we have accepted responsibilities and leadership in the solution of non-technical problems in the public welfare.

If I were a Paul Hoffman administering the magnificent Ford Foundation, I would distribute a copy of Nevil Shute's recent book, *Around the Bend*, to every engineer in every land because this book offers the sort of basic philosophy men crave. It demonstrates the importance of the industrious life, the reliance that men must place on the engineer for their every-day safety and therefore the international character of engineering science, the unity of the aspirations and goals of men, and the fact that man's innate desire for brotherhood is thwarted only by evil leadership.

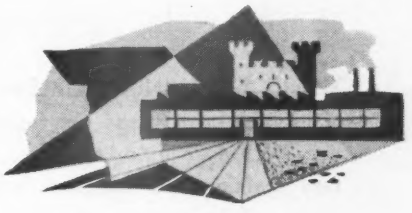
If our great engineering profession in all its branches can take from this book its clear injunction that theirs is the task of leadership out of the present international confusion of thinking, away from the soul-destroying philosophy of maximum return for minimum effort, then and only then will we have justified our pride in these past 100 years of engineered progress and have proven our right to this rich heritage of tradition and great works. — *Carlton S. Proctor, President, ASCE, Civil Engineering, November*, 1951.

THE DARKENING PICTURE

There is great risk in attempting to forecast the situation representing engineering manpower over the next few years; yet the writer (Dean S. C. Hollister) believes the present status of engineering manpower to be so critical in the nation's welfare and security that every means available should be utilized to make the adequate preparation for the future. Appraisal must be made with what evidence is at hand, without awaiting the elusive and practically unattainable perfect data.

The first factor of importance is that there is a wholly inadequate supply of engineering graduates to meet the ultraconservative estimate of need of 30,000 per annum. The best efforts at increasing interest of high school graduates may add 4,000 or 5,000 to the annual graduations in engineering —but not before 1956. With the addition of 5,000 that year the total graduations would be only 22,000.

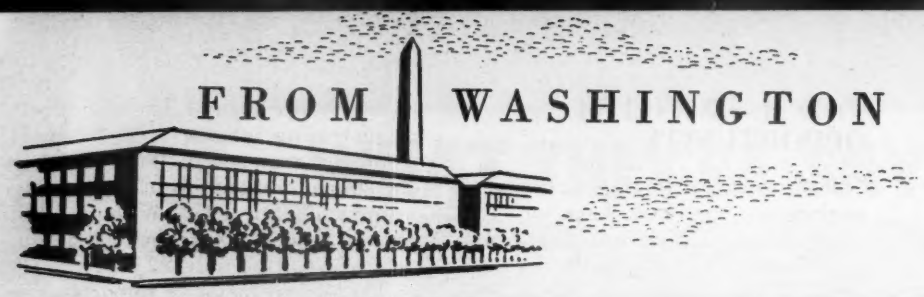
The second factor of importance is that at present enrollments, and with no withdrawals for military service of any engineering students, there will not be enough graduates by and after 1953, at least to 1961, to meet the peacetime need as conservatively estimated by the Bureau of Labor Statistics, the shortage being at least 20 per cent.



The third factor of importance is that during the post-war four years prior to Korea, 149,000 were graduated and employed. This is a greater number than that of the pre-war years upon which the Bureau of Labor Statistics based its peacetime estimate for the 1950's, by nearly 90 per cent. A conservative estimate of post-war peacetime need would appear to be 30,000.

The fourth factor of significance is that the industrial and governmental *civilian* need of engineers is far greater than the graduating class of 1951 (38,000). Whatever the military requirements for engineers may be, they are not available except by taking men from industry; thus further intensifying the needs of industry.

The fifth factor of importance is that all considerations of need are based upon the current pattern of utilization of engineers by industry and government. The first step toward bringing need and supply toward better agreement will be to *change the pattern of utilization* through spreading the engineers' work over a greater range, and thereby lessening the need. The extent to which policy decisions by industry and government can in this way achieve a modification will determine the extent of the reduction of the need. In any case, it does not now appear that by any present or likely pattern of utilization or available source of supply the need and supply will be brought into balance over the next decade.—*S. C. Hollister, Dean of the College of Engineering, Cornell University, The Journal of Engineering Education, October, 1951.*



FROM WASHINGTON

By
Arthur R. Woods,
N.S.P.E.'s Legislative Analyst

ADJOURNMENT OF THE 1ST SESSION OF THE 82ND CONGRESS, until it convenes as the 2nd session on January 8, 1952, provides a breathing spell in which to evaluate the year's legislative activity. Legislation directly affecting the engineering profession as such was not extensive, but a number of laws, and in particular a number of administrative decisions implementing these laws, **will be of decided interest to engineers.**

THE CONTINUING PROBLEM OF HOW BEST TO USE OUR NATIONAL MANPOWER, and more especially how best to use our **technological and engineering manpower,** touches nearly every field of federal activity. Most important of all individual pieces of legislation dealing with this subject is the **Universal Military Training and Selective Service law.** No direct provision is made in this law to ensure the continuing supply of technicians, scientists, and engineers necessary to relieve apprehension of severe shortage in this vital field. Apparently it was hoped that armed services demands would level off at a point where the problem of maintaining the supply of student engineers would not become acute.

The recent proposed increase in armed services total strength from 3.5 to 4.0 million men during the year 1952 indicates that the failure to make specific engineer manpower provisions in the draft law was a serious mistake. It becomes clear that, beginning the first of next year, **very nearly every able-bodied youth who has not as yet seen service, may well be subject to call.** To get the one-half million men above the number originally scheduled, draft boards will be required to clamp down drastically on exemptions and deferments no matter how obvious the reasons for deferment may be.

AS A GENERAL RULE, those to be hardest hit are non-veterans who have already been deferred, or who would normally expect to be eligible for deferment. Applications for extension of deferment for those with critical occupations who are working in essential industry **will be granted in only the most exceptional cases, and then with reluctance.** Under the terms of the new law those deferred as of June 19, 1951, or since that date, remain liable for service until they become age 35. Few will remain uncalled. Deferment of college students with good grades may be continued by many boards, but unless commissioned through ROTC or physically unfit, all may expect to be met by the draft upon graduation.

SOME OF THOSE ALREADY IN SERVICE, released as planned after 24 months' duty, may take up a little of the slack. Part of them will return to complete their scholastic training; others will return to their places in the defense economy. These, however, will be far from sufficient in number to compensate for several lost, or badly depleted, classes of graduating engineers.

As a result of what now seems to be a firm policy of requiring a contribution of military service from all, regardless of what other contributions might be made in other ways to the country's welfare, more and more emphasis is being placed on the proper utilization of the scientific and engineering manpower resources now in being. **Manpower commissions and committees, both official and non-official, are piled one on the other in the Washington scene;** none of them has come up with a definite policy recommendation which has been universally accepted and implemented. The heart of all the varied recommendations seems to be that engineer skills must be used as far as possible **in engineering work only,** and that every engineer must be employed in a position where his highest capacities are being used. There will, of course, continue to be isolated examples of the waste of engineer manpower, but there is reason to believe that a pattern of proper use is being encouraged which, for the most part, will be followed.

THE PRESSURE FOR ADDITIONAL MEN FOR THE ARMED SERVICES undoubtedly will have its effect on the Universal Military Training program. There will be objection to initiating any program which will, in effect, permit a chosen few to contribute only six months' service before going into a reserve force. Except for a limited test program it is probable that the complete **UMT program will have to wait for a relaxation of manpower demands.**

THE SALARY STABILIZATION BOARD CONTROLS SALARIES AND OTHER COMPENSATION for all privately employed professionals who are not represented by a union. This Board has recognized that appropriate increases in compensation for engineers under its jurisdiction should be authorized under a formula designed to correct hardships and inequities. **The special problems in this field will require a separate regulation.**

The basic problems arise because on January 25th, 1951, the stabilization date, there was frequently a disparity, amounting to a substantial inequity, **between the compensation of engineers of comparable skill and experience;** and between newly employed engineers on the one hand, and those who had been employed for a longer period of time on the other. This is further complicated by the fact that the serious shortage of engineers makes it difficult for some companies to follow the general salary stabilization program. The Board has given some thought to the blanket exemption from controls of **engineers employed by engineering firms,** but feels that this is not a satisfactory solution to the problem. It is apparent from a recent ruling denying this blanket exemption to accountants that the Board reasons that such a move would open the flood gates to requests from numerous other licensed activities, and that a general exemption in all such cases would seriously impair the controls program. Any possible general exemption will have to be spelled out in an amendment to the Defense Production Act before the Board arrives at such a solution.

MEANWHILE THE BOARD STATES THAT THE PROBLEMS OF ENGINEERS should be separately treated under salary stabilization to accomplish certain objectives, and that a specific regulation is in the process of preparation.

First, appropriate adjustments in the compensation for engineers will be authorized through a general regulation to permit correction of hardships and inequities. **Second,** additional compensation for extra hours worked, or for an extended work week, will be authorized at the non-executive or non-administrative levels. It should be noted that until the new regulations appear the present ones are still controlling.

NOW IS A GOOD TIME FOR SELF-EMPLOYED ENGINEERS, particularly those 50 years of age or older, to examine very carefully the possibilities inherent in the Social Security law. Except for members of the various professions, the Social Security law has been **extended to cover many categories of individual proprietors or members of a partnership.** Professionals are not covered, except as they are employed in some capacity. In order to increase coverage the law was so written that, as of now, a number of older people may well find a bargain. **By contributing a comparatively small amount over a small period of time a tax-free pension of substantial size may be obtained.** In the most favorable, and admittedly exceptional case, a total contribution of $81.00 may buy a life-time monthly pension of $93.00.

Because of the method of computing the number of quarters of coverage necessary to establish a right to these benefits, the picture will change rapidly in the years to come. **Never again will it be so favorable under the current law as it is today.**

One additional factor is of decided interest. As a general rule annuitants between the ages of 65 and 75 may not earn over $50.00 per month without losing all or part of his benefits. This restriction, however, is not true for **self-employed professionals** when the income is derived from the practice of their profession. Having once established his rights the self-employed professional engineer may continue to draw his social security benefits no matter what his income from professional practice.

With Our Members . . .

CERTIFICATE PRESENTATION

Shown above is one portion of the November 8 meeting of the Canton Regional Chapter, OSPE, at which sixty men received certificates of registration as P. E.s or E-I-Ts. Left to right: Carl Schoenbaum, P. E., President, Canton Chapter, OSPE; New Registrant (unidentified); Walter Graf, P. E., Member of the Ohio Board of Registration; Lloyd Chacey, P. E., Executive Secretary, OSPE; and Douglas Greth, P. E., Secretary-Treasurer of the Canton Chapter.

Canton Chapter Holds Certificate Presentation Recently

Sixty men in the Canton, Ohio area received certificates of Registered Engineer or Engineer-in-Training at the November 8 meeting of the Canton Regional Chapter of the Ohio Society. The Canton Chapter was host to the Akron, Mahoning Valley and Jefferson County Chapters, and 130 members and guests attended the dinner meeting. An additional 38 men eligible to receive certificates were not present at the meeting, and will receive their certificates by mail.

Guest speaker for the occasion was Dean R. D. Landon of the College of Engineering of the University of Akron. He spoke on "The Engineer's Place in Today's World—An Opportunity and a Challenge." Dean Landon stressed the increasing shortage of engineers and offered this as a challenge for those with technical training to make full use of it.

Lloyd Chacey, P. E., Executive Secretary of the Ohio Society was present, and assisted Walter Graf, P. E., in distributing the certificates to the new registrants.

NSPE Interprofessional Relations Committee Meets In D. C. Recently

The Interprofessional Relations Committee in NSPE met on October 19 in Washington, with all members present.

Some of the suggestions made by the committee have recently been announced by Chairman Cherry L. Emerson. They are: 1. An exchange of speakers among the various learned professions at their various meetings on the national, state and local level. 2. That committees similar in nature to our Interprofessional Relations Committee be established in appropriate societies representing the other learned professions. 3. That NSPE prepare booklets, each directed to an individual profession, dealing with the matter of how such professions can utilize engineering services to the advantage of that profession.

Chairman Emerson also announced that Mr. Glenn Stanton, President of the American Institute of Architects, is at this time appointing an Interprofessional Relations Committee to operate on the national level, with purposes similar to those of the NSPE committee. The NSPE committee intends to ask for a joint meeting with the A. I. A. committee and to cooperate as fully with that group as circumstances permit.

Joint Meeting Held By Minnesota And Wisconsin Chapters

The Western Chapter, Wisconsin Society, and the South East Chapter of the Minnesota Society held a joint meeting at the Oaks in La Crosse, Wisconsin on November 13. The two Chapter presidents, Clifford Nelson, P. E., Black River Falls, Wisconsin, and Ralph E. Monson, P. E., Rochester, Minnesota, presided.

At the conclusion of the business meeting, George A. Sievers, P. E., Chairman of the Wisconsin Society's Committee on Ethics and Practice, was introduced. Mr. Sievers discussed the Rules of Ethical Conduct adopted by the Wisconsin Society. He advised that these rules, together with the National Canons of Ethics constitute a "Way of Life" for the scrupulous and conscientious engineer and must be constantly kept before the members of the profession.

A number of examples of the some 200 cases placed before the Ethics and Practice Committees during the last four years were discussed. In connection with these cases, Mr. Sievers explained that the enforcement phase was handled on a voluntary basis insofar as possible and correction of conditions leading to complaints was emphasized more than punishment of violators.

Bonnett Of New York SPE Named As Vice President Of Social Aid Society

Leland B. Bonnett, P. E., member of the Kings County Chapter of the NYSSPE and vice president of the Consolidated Edison Company of New York, Inc., has been elected a vice president of the Brooklyn Bureau of Social Science & Children's Aid Society, it has been announced by Mrs. Mary C. Draper, president of the agency.

In addition to his membership in the New York State Society, Mr. Bonnett is a fellow of the A. I. E. E., and a member of the American Society of Mechanical Engineers.

The Brooklyn Bureau of Social Science & Children's Aid Society serves all faiths and races, through family service, rehabilitation of the blind and handicapped, placement and supervision of children in foster homes and training of unadjusted boys at the Herriman Farm School in Monsey, Rockland County, New York.

Missouri Society Holds 15th Annual Meeting in St. Louis

The central theme of the Missouri Society's Fifteenth Annual Meeting which was held at the Hotel Statler in St. Louis on October 19 and 20 was the great opportunity which engineers now have to assume more responsibility and leadership not only in the affairs of their profession, but also in the affairs of mankind.

NSPE President L. L. Dresser was honor guest at the Annual Business Session and addressed the group on the progress of the National Society and its significance to the engineering profession. He urged all engineers to give some of their talent and time toward the improvement and advancement of the profession. "It will increase our stature with fellow engineers, and we must increase stature with engineers before we can do so with others," he said.

On Saturday morning, NSPE Executive Director Paul H. Robbins told the group of the National Society's work with governmental agencies on matters affecting engineers. Mr. Robbins also discussed efforts being made by the NSPE staff in cooperating with the various committees and agencies in providing information and recommendations for maximum use of professional engineers in the current period of critical engineer shortage.

A forum on the subject "A Water Management Policy for the State of Missouri" was next on the meeting's agenda, and the topic was presented by three highly qualified speakers: Colonel L. J. Lincoln, District Engineer, Kansas City District, Corps of Engineers, U. S. Army; Mr. John Dewey, Water Resources Engineer, Missouri Division of Resources and Development, Jefferson City; and Professor John H. Longwell, Dean, College of Agriculture, University of Missouri, Columbia.

Approximately 100 members heard Lt. Governor James T. Blair, Jr., when he spoke at the farewell luncheon on Saturday. In his discussion of the present trends in state and national government, Lt. Governor Blair stated that engineers, being professional people, were charged with an added responsibility of not only voting at the polls, but also of being informed and using their influence in accordance with their judgment as to what is desirable and sound.

The Annual Dinner and Dance held on Friday evening was the social highlight of the meeting.

MISSOURI'S 15TH ANNUAL MEETING

Shown above at the October 20 farewell luncheon of the Missouri Society's Annual Meeting are, left to right: Paul H. Robbins, P. E., NSPE Executive Director; James T. Blair, Jr., Lt. Governor of the State of Missouri; Dean Wilson, P. E., Missouri Society President; Fount Rothwell, P. E., Chairman of the MSPE Legislative Committee; and L. L. Dresser, P. E., President of the National Society.

Pictured above are Dean Wilson, P. E., President, Missouri Society (left) and NSPE President L. L. Dresser as they talked over Society business at the Statler Hotel in St. Louis.

Officers of the Missouri Society are shown as they met at the MSPE Annual Meeting. Left to right: H. J. Bruegging, P. E., Treasurer; Dean Wilson, P. E., President; C. M. Lytle, P. E., President-Elect; J. W. Hubler, P. E., 1st Vice President; and Clifford Wood, Executive Secretary.

NEW BRONX COUNTY OFFICERS

The Bronx County Chapter of the NYSSPE held their annual elections recently and elected the above engineers to office. They are, left to right, seated: Otto Mald, P. E., 2nd Vice President; Edward B. Fitzpatrick, P. E., President; Daniel J. O'Connell, P. E., 1st Vice President. Standing, left to right: Harrison Blankstein, P. E., Treasurer; Daniel J. Houlihan, P. E., Secretary; and Earnest F. Fox, P. E., Historian.

Legislative Theme Highlights Delaware Society Meeting

The Delaware Society met on November 14 at the Hob Tea Room in Wilmington to hear discussions on the theme "Legislation of Interest to Engineers."

Following the invocation, which was given by Rabbi Drooz of Temple Beth Emeth, two speakers were presented: Clarence A. Fulmer, Principal of Wilmington High School, who spoke on "Current Events," and Clarence T. Shoch, P. E., Chairman of NSPE's Legislative Committee, who addressed the group on "The Legislative Activities of NSPE." John I. Cahalan, P. E., Chairman of the Delaware Society's Legislative Committee, led the subsequent discussion concerning legislation in Delaware.

Ohio's Franklin County Chapter Holds Dinner And Dance

The Franklin County Chapter of the Ohio Society held a Smorgasbord Supper and Dance on November 27 at the Fort Hayes Officers' Club in Columbus.

Music was played throughout the dinner hour, and cards were available for those who did not care to dance.

Polivka Of California Society To Receive Black Star Medal

Thirteen years after he was nominated by the French Legion of Honor to receive the Knighthood of Etoile Noire (Black Star), Dr. J. J. Polivka, member of the East Bay Chapter of the California Society, and noted Berkeley civil engineer, is slated to receive the medal, symbolic of his achievements in the field of civil engineering.

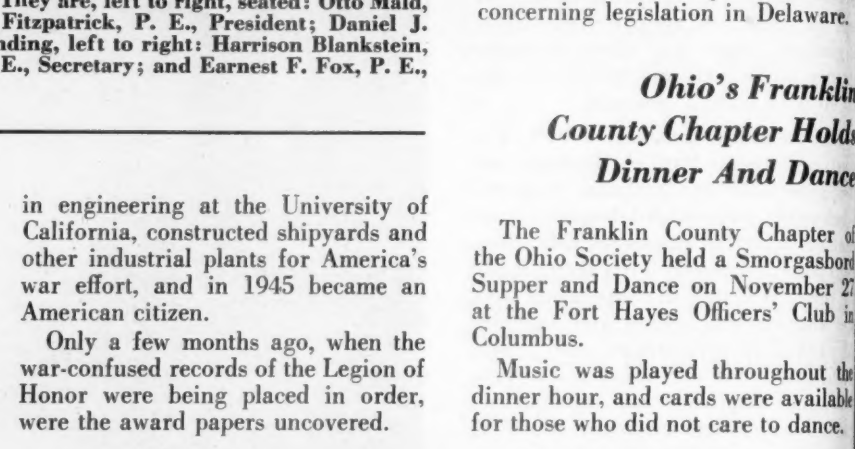
Dr. Polivka already has received a diploma testifying to the award. The Black Star Medal will be presented to him as soon as it is received from Paris by the French consul in San Francisco.

Dr. Polivka, a native of Czechoslovakia, was selected to design and build his country's building at the Paris International Exposition in 1937. That building and his exhibits at the exposition won him two diplomas and two gold medals and placed him in line for the coveted Black Star. Pending the presentation, Dr. Polivka designed and constructed the Czechoslovakia Building at the New York World's Fair, and returned to his native country just 10 days before German occupation.

He escaped to the United States, however, became a research associate in engineering at the University of California, constructed shipyards and other industrial plants for America's war effort, and in 1945 became an American citizen.

Only a few months ago, when the war-confused records of the Legion of Honor were being placed in order, were the award papers uncovered.

NEBRASKA SPE RECEIVES CHARTER



Pictured above is Sidney L. Stolte, P. E., Immediate Past President of NSPE, (left) as he presents the charter for the Nebraska Society of Professional Engineers to Nebraska President George E. Miller. Walter Johnson, P. E., National Director from the Kansas Society, looks on. The Charter meeting of the Society was held on October 25 at the Fontenelle Hotel in Omaha.

Lawrie Represents NSPE On Treasury's New Professional Committee

Ritchie Lawrie, Jr., P. E., Past President of NSPE, and member of the Pennsylvania Society, was NSPE's representative at a meeting of the newly-formed National Professional Associations Advisory Committee for United States Defense Bonds at the Treasury in Washington on October 10 and 11. The meeting was held to discuss plans for the enrollment of professional people in the Treasury's Bond-A-Month Plan for the purchase of Savings Bonds.

Participating in the meeting were representatives of the American Medical Association, American Dental Association, American Pharmaceutical Association, American Hospital Association, American Institute of Architects, the National Medical Association and the National Society of Professional Engineers.

The two-day program, which was opened by Secretary of the Treasury John W. Snyder, included a panel discussion on defense policy, a dinner meeting at the Mayflower Hotel with the principal address given by Under-Secretary of the Treasury Edward H. Foley and a program planning session. Those who participated in the defense policy panel were: Brigadier General A. Robert Ginsburgh, Department of Defense; Winfield W. Riefler, Assistant to the Chairman of the Board, Federal Reserve System; Francis Henry Russell, Director, Office of Public Affairs, Department of State; Elmer B. Staats, Assistant Director, Bureau of the Budget.

Society Member Named Head of Electrical Engineering At Ga. Tech

Dr. William A. Edson, member of the National Society, has been named Director of the School of Electrical Engineering at the Georgia Institute of Technology, it was announced recently by Dr. J. W. Mason, Dean of Engineering.

In addition to his National Society membership, Edson is active in various organizations, including the Institute of Radio Engineers, American Physical Society, American Association for Advancement of Science and American Society for Engineering Education.

Dr. Edson is a licensed engineer in the state of Georgia and is a consultant to the United States Bureau of Standards. He holds several patents in connection with oscillators and resonators, and has contributed numerous articles to technical periodicals in his field.

New York Chapter Establishes New Employment Service

The New York Chapter of the NYSSPE has inaugurated an Employment Service Committee under the Chairmanship of Albert H. Morgan, P. E. This Committee is working with a Personnel Management Counselor who will advise Chapter members as to the best manner in which they may present their qualifications for prospective employment. The service is without charge and limited to members.

Florida Society Holds Fourth Annual Meeting In St. Petersburg

Mr. Paul H. Robbins, Executive Director of the National Society, was the principal speaker at the Fourth Annual Meeting of the Florida Society which was held at the Soreno Hotel in St. Petersburg on November 29 and 30.

Robbins discussed the activities of National Headquarters with particular reference to legislative matters of interest to the professional engineer, and the role of the engineer in defense activities.

The meeting began with a fellowship hour meeting held on Thursday afternoon. A special ladies' program was arranged for the meeting.

The main business meeting, which was held on November 20, featured committee reports of accomplishments during the past year.

Tri-Valley Chapter Of Kansas SPE Hears Flood Control Talk

The Tri-Valley Chapter of the Kansas Society met in the Tankersley Hotel, Clay Center, on the evening of October 31. Featured speaker for the occasion was Dr. Reed Morse, Head of the Department of Civil Engineering, Kansas State College. He addressed the group on the work of the College Committee on Flood Control, and described plans for the Forum on Flood Protection which was held at the Kansas State College on November 27 and 28.

Following dinner, the ladies held a separate meeting.

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News To Note

New York State

The Albany County Chapter of the NYSSPE met on November 20 at Panetta's Restaurant in Menands to hear Ralph Edward Winslow, Professor of Architecture and Head of Architecture at Rensselaer Polytechnic Institute discuss "Modern Trends in Building Construction."

Georgia

The Savannah Chapter of the Georgia Society met at the Pirates House in Savannah on October 10. Harry Sugden, Chief of Planning and Reports Section, Corps of Engineers, spoke to the group on the "Development and Improvement of Rivers and Harbors."

Ohio

The Cincinnati Chapter of the Ohio Society met on November 5 at the Hotel Alms to hear an address, "Fernald — A Stepping Stone to Atomic Energy" by Mr. George W. Wunder. Mr. Wunder is engineer of the National Lead Company, at the Fernald Atomic Energy Plant.

Tennessee

The Knoxville Chapter held a Ladies' Night meeting on November 26 at the S & W Cafeteria. Guest Speaker Morde J. Dabneym, Engineer-Technologist for the Plantation Pipe Line Company, Atlanta, Georgia, spoke on "Remote Pressure Gauging by Use of Electricity."

West Virginia

The Fairmount Chapter of the West Virginia Society met on November 26 in Fairmount. The program was highlighted by an address by Dr. J. G. Hutton of the General Electric Company. His subject was "Science and Engineering." In addition to his talk, Dr. Hutton used interesting magic tricks to demonstrate some of the developments in science and its application to engineering.

Pennsylvania

Mr. J. C. McKeon, Manager of University Relations, Educational Department, Westinghouse Electric Corporation, addressed the Midwestern Chapter of the Pennsylvania Society on "The Professional Development of the Engineer" when the group met on October 1 at Schuster's Restaurant at Greenville, Pennsylvania.

California

The San Jose Chapter met on November 20 at the Science Building of San Jose State College. Dr. H. Murray Clark, Associate Professor of Chemistry, San Jose State College, discussed "Commercial and Industrial Uses for Radio-active Materials," and Mr. Sam Browder, Assistant Director of Civil Defense for the City of San Jose, presented a short discussion on "Radiological Monitoring" and accompanied his talk with a short film entitled "Atomic Power."

Kansas

The Wichita Chapter of the Kansas Society held a dinner meeting on November 23 at the YMCA Building in Wichita. O. O. Ediger, P. E., of the Ediger Engineering Company, together with his associates, addressed the group on the new Wichita Municipal Airport.

California

The San Joaquin Chapter of the California Society has been inspecting, at the request of the Stockton Unified School District, their local schools in an effort to determine their ability to withstand an atomic explosion. Chapter President H. A. Eriksson announced recently that all schools in the area have now been surveyed.

Missouri

The Western Chapter of the Missouri Society met on Thursday, November 15 at the Wishbone Restaurant in Kansas City, Missouri. Guest speaker was Reed McKinley, P. E., Western Chapter member, and Director of Public Works for the city of Kansas City, Missouri. His topic was "The Engineer in Times of Disaster." A social half hour was held before the dinner.

Illinois

The Capital Chapter met on October 30 at the Lincoln Park Pavilion to hear Mr. Frank A. Reed, Division Supervisor of bridges and buildings for the Illinois Central Railroad speak on the ICRR's 100 years of progress.

District of Columbia

The District of Columbia Society met on November 26 at the Pepco Auditorium in Washington, D. C. Guest speaker was Colonel Thomas J. Hayes, Assistant Engineer Commissioner for the District of Columbia and Deputy Director of Engineering Service for District Civil Defense, who spoke on "Engineers in Civil Defense."

Pennsylvania

The Lebanon County Chapter held an Armistice Day meeting on November 12 at the Hotel Weimer in Lebanon. The feature speaker for the dinner meeting was Robert G. Peets, P. E., Lebanon County Chapter member, who spoke on the topic "Mining at Cornwall."

Texas

The Executive Board of Directors of the Texas Society met in Austin on October 19 for their final meeting of the year, and discussed the current affairs of the Society.

N.S.P.E. Officers

President, L. L. DRESSER, P.E.,
Dresser Engineering Co., Box 2518,
Tulsa, Oklahoma

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Professional Postscripts

Ohio Attorney General Stresses Engineers' Professionalism

Ohio's Attorney General has recently ruled that under his state's law the Ohio Department of Industrial Relations is not authorized to determine the prevailing rates of wages for technical and professional engineers, in connection with work on public improvements.

On June 27th, 1951 the Department of Industrial Relations certified to a County Engineer a schedule of prevailing wage rates effective July 1, 1951. In addition to the usual and customary rates for mechanics and laborers in the building and construction trades, there was included in this schedule a tabulation of rates for a new classification entitled "technical and professional engineers" which had not been included in any previous schedule. The schedule set forth a number of job classifications from Chairmen and Tracer to Project Engineer and Designer. The General Code of Ohio relating to the prevailing rate of wages to be paid in the construction of public improvements requires the Department of Industrial Relations to ascertain and determine prevailing wage rates for "mechanics and laborers for the class of work called for by the public improvement."

The County Engineer raised the basic question whether the phrase "mechanics and laborers" as used in the code authorized the Department of Industrial Relations to ascertain and determine the prevailing wage rate for engineer services as it purportedly did with the issuance of the June 27th certification.

After noting that the original law referred to "employees" in general, the Attorney General went on to discuss the amended and current law in which the words "mechanics and laborers" have been substituted for the word "employees." He further pointed out that this change must be considered significant since, by definition, the word "employees" must be considered more inclusive. An intention, therefore, must be ascribed to the legislature, in making the change noted, to confine the provisions of the law to the classes named rather than to extend it to all employees who might have some part in a public work. After citing a number of decisions in support of his position which distinguish professional engineers from other classifications, the Attorney General goes on to say:

"It is obvious that not all of the employees mentioned in the classification supplied by the Department of Industrial Relations in the case you present, are engineers. Most of them are engaged in work which calls for a certain degree of specialized training. However, it is possible that some of the positions named may be filled by men who might be classed as laborers. I do not consider that it is necessary for me, in answering your question to attempt to draw a precise line. It is my opinion that the General Assembly in enacting the laws in question had in mind only men who work with their hands, and who are included in the commonly accepted definitions of 'mechanic,' 'workman' and 'laborer,' and did not intend to include persons whose work is based on professional training."

Engineering Conference Board for Industry Appointed

An extensive research program into problems involved in Engineering-Management Communication and the appointment of a Professional Engineers Conference Board for Industry, was announced recently by L. L. Dresser, P. E., President of the National Society of Professional Engineers.

The announcement followed a semi-annual meeting of the Board of Directors of the NSPE in Kansas City, Missouri, recently.

Under the newly announced program, several hundred top management executives in all segments of American industry who deal with engineers will be asked a series of questions on problems of interest to engineering and industry. Problems of Engineering - Management Communication will be the first of a series.

Members of the Conference Board for Industry, composed of professional registered, engineers who have attained prominent positions in industry, have aided in the preparation of a scientifically-designed questionnaire now being mailed to industrial executives, Mr. Dresser said.

The Board has been established as an advisory group to guide the National Society of Professional Engineers in conducting its research program on engineering - management problems. The Board will screen and advise on the contents of the various research survey questionnaires and on the final reports to be issued, it was pointed out. Several thousand of the first questionnaire of the series have already been sent out and the bulk of them have been returned.

Members of the National Society of Professional Engineers Conference Board for Industry are:

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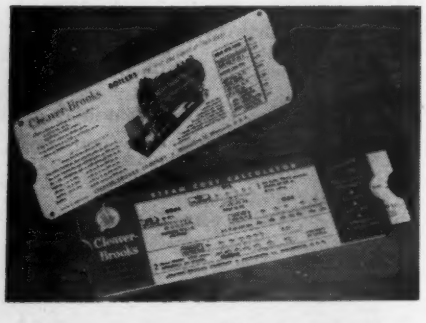
What's New

As a service to our readers, this column will describe briefly new product developments of general interest to professional engineers. For further information concerning these products, we will appreciate your filling in the coupon provided for this purpose, and mailing it to the American Engineer.

● A new and modernized "slide rule" type calculator designed to provide a ready means of computing steam costs has been made available without cost to engineers, plant executives, and those who will find it useful in their work by the Cleaver-Brooks Company. The calculator enables the user to compute the comparative steam costs per 1,000 pounds, using coal, oil, or gas . . . and based on fuel costs of price per ton, price per gallon, and price per cubic foot.



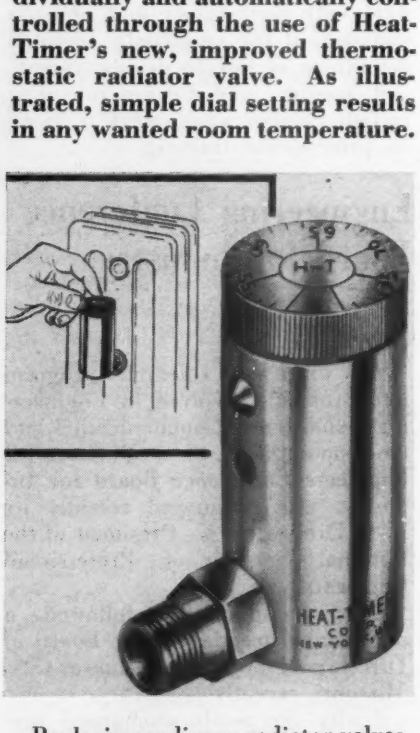
The steam cost calculator takes into account the efficiency of the system. Cleaver-Brooks equipment is guaranteed to perform the 80% fuel-to-steam efficiency. On the reverse side of the calculator is an easy-to-use slide indicating Cleaver-Brooks boiler horsepower, pounds of steam per hour, output in ETU, EDR steam in square feet (gross), EDR steam in square feet (net), oil consumption per hour, and gas consumption per hour.

Such terms as boiler horsepower, therms, EDR steam, etc., are also defined. Various grades of oil and BTU gas are also defined. ***Number 1.***

● The Model B Condensifilter, a device which removes water, oil, sludge, and other foreign materials from compressed air, is a new development of Hankison Corporation. Combining in a single unit a dehydrating device, a mechanical filter and a self-purging trap, the Condensifilter provides dry, clean compressed air for operating instruments. Measuring only 15″ high by 9″ in diameter, it has a capacity of 30 c.f.m. at 100 p. s. i.

The Condensifilter is recommended for purifying and dehydrating compressed air used in combustion and process control; in soaking pit, blast furnace and open hearth control; in the operating of boilers, pneumatic tools, paint spray sand blast and laboratory equipment; and in the operation of agitation equipment in food and chemical processing and in electroplating. ***Number 2.***

● Room temperatures are individually and automatically controlled through the use of Heat-Timer's new, improved thermostatic radiator valve. As illustrated, simple dial setting results in any wanted room temperature.



Replacing ordinary radiator valves, Heat-Timers, through automatic control of radiator air venting, speed heat to colder rooms . . . save heat waste on rooms already warm, and allow desired temperature variations from room to room. Body of valve is brass, finish is chrome. ***Number 3.***

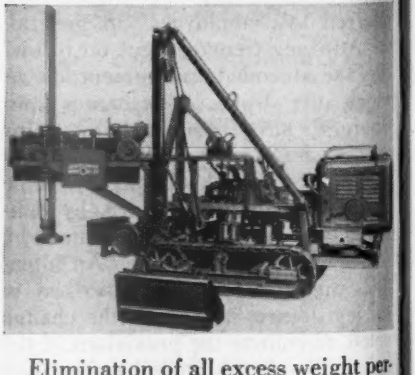
● A lightweight, highly maneuverable portable gasoline engine earth auger has been designd by the Mall Tool Company. Made with new magnesium alloy castings, it can be used in any terrain by construction and maintenance crews for drilling holes for retaining wall supports, guard-rail posts, fence posts, and temporary power and communication line poles. Equips with 30-inch augers in either 6-, 9-, or 12-inch diameters.

To serve as a dual purpose machine, this digging unit quickly converts to chain sawing. The digging attachment is detached and replaced with chain saw assemblies that are available in cutting capacities from 18 inches to 7 feet. With this one engine and both attachments, post and pole timber can be felled, cut to size and placed in the ground faster and more economically. ***Number 4.***

● Kerlow Steel Flooring Company announces LQ-35 Rectangular Steel Bridge Flooring. LQ-35 whether laid longitudinally or transversely on a bridge, will carry H20 loading on a 15″ circle up to a span of 48″ and weighs approximately 19 pounds.

LQ-35 is made with grating parallel with traffic and transverse to traffic. In the latter type, the transverse bars that the tires ride on are placed higher than the longitudinal bars, and the transverse bars are serrated to enable tires to maintain or to develop greater traction for emergency stopping. The grating is finished with a red, lead paint which was developed especially for Kerlow by one of the leading paint companies in the U. S. to meet rigid specifications. ***Number 5.***

● The Cleveland Trencher Company's "Model 80" is a one-man-operated machine that tamps, backfills, lays pipe, unloads and handles pipe, sheathing, etc., and does all types of light crane work. The versatile machine is mounted on a crawler having 24 separate travel speeds, ranking from one foot per minute up to ⅛ mile per hour, coupled with high stability and maneuverability.



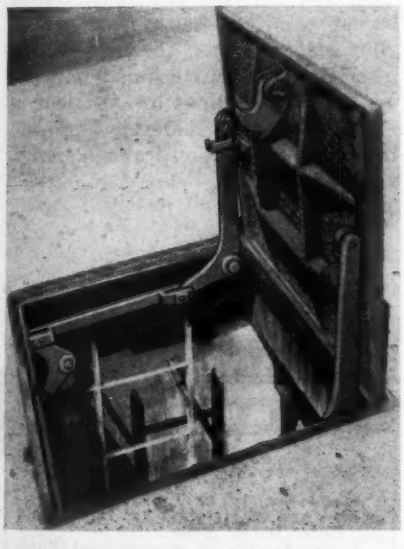
Elimination of all excess weight permits use of the model 80 with complete safety over sidewalks and lawns. It backfills from either side of trench,

from the side on which spoil bank is located or from the opposite side. Without extra counterweights, it will lift a weight of 6,000 pounds, located three feet from the edge of the crawler track. Standard boom sections are extendable to 15 feet. ***Number 7.***

● A new 44-page *Book No. 2410* on coal and ash handling equipment for power plants, has been published by Link-Belt Company, and is now available to any interested reader.

The book contains helpful layout drawings and interesting photographs of actual installations. There are sections on unloading coal, auxiliary unloading, coal storage and reclaiming, crushers, transporting and distributing equipment, ash handling, and water intake screens. ***Number 8.***

● The New Wachs Safety Counterbalanced Vault or Manhole Cover is designed for safe and easy operation. Opening it is accomplished by inserting a combination Key-Handle and giving it a half turn. Lifting the cover to its vertical open position is a one-handed job because counterweights, which also hold the cover in a protective upright position, ease the load.



The Safety Vault Cover cannot slam or drop into the vault to cause injury or damage, and the positive tamperproof lock cannot be opened without the Key-handle. ***Number 6.***

● Profusely illustrated, and telling the story of the manufacture of Expanded Metal and its uses in considerable detail, the new *Expanded Metal Catalog*, just issued by Penn Metal Company, is a real treasure house of information for anyone concerned with the use and fabrication of metal and metal products.

The new catalog shows a great many examples of uses for this product and suggests many others. Emphasis, naturally, is placed on the advantages of Expanded Metal in saving steel and other critical metals while at the same time accomplishing the purposes of providing saving in weight, allowing for free passage of light and air, accomplishing interesting and attractive decorative effects, and permitting flexibility of construction not possible with solid sheet. Copies of the publication are now available without charge. ***Number 9.***

● The latest developments by the Preco Laboratories now makes it possible to incorporate the properties of Silicone Resins in a clear, non-staining water repellent coating for porous exterior masonry surfaces. Known as Silipruf, this material is easily applied by brush or spray and does not change the color or texture of the surface to which it is applied. Another feature of this material is that it does not yellow with age and is long lasting.

A unique property of Silipruf is that although it has resistance to water penetration, it does not prevent the masonry surface from breathing, thereby allowing any trapped moisture to be released. Silipruf can be applied in temperatures as low as 15 degrees Farenheit. ***Number 10.***

● Speeds of many machines are now measured from one convenient location, with the new Matron tachometer, which employs a simple machine selector knob. Reduced first costs and operating expenses are realized by eliminations of duplicate tachometer indicators, and by saving steps and time of the operator.

Quick, accurate speed tests and comparisons are easily accomplished, even when the indicator is located up to 1,000 feet from any of the machines. A wide selection of over 50 standard full-scale range markings are available, all with large, easy-to-read graduations. Stable calibration, initially made at the factory, can easily be adjusted in the field to accommodate extraordinary conditions. ***Number 11.***

● After an absence of several years, "Stabilo" Water Color Pencils can be supplied to engineers and kindred professionals, it was recently announced by the Swan Pencil Company.

The leads of these pencils are of uniform density, hard to break, and notable for their intense true colorings. Colors, ranging from one end of the spectrum to the other, are packed 24 in an attractive, full-colored box, and are superb for delicate watercolor execution where every stroke must be perfect. Further information regarding "Stabilo" is available. ***Number 12.***

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Somervell

(*Continued from page* 10)

liberty and democracy. They get ENSLAVEMENT. Austria, Hungary, Czechoslovakia, Poland . . . are tragic evidence of that fact.

Where did they come from . . . these highly developed techniques for the twisting of word meanings and the distortion of basic economic and political concepts? Who started them?

These questions are easily answered. Karl Marx was the major prophet of the cult. The erroneous and debased concepts of capital, enterprise and profits current today are basic principles of the Marxian thesis.

But how is it that the American people . . . the most highly educated people in the world . . . a people living under the best conditions to be found anywhere in the world . . . a people surrounded by great and available natural resources . . . a characteristically enterprising people . . . people who have enjoyed beyond all others the benefits of the system of capitalism and enterprise . . . how can such people be willing to permit these political and economic delusions to thrive and grow in their midst?

There are, I believe, several answers to that question. Possibly a good many of them could be classified under the heading of COMPLACENCY. The relatively secure and bountiful life we Americans lead in comparison with that of other peoples automatically breeds a certain degree of complacency. The average American, absorbed in his trade, his profession or his business has, perhaps, come to the conclusion that, after all, there isn't much he can do about it.

WHAT, you may ask, can we engineers do to hasten the day of awakening . . . the time when the inevitable sequence of events will bring the nation as a whole to realize the true nature of the economic theories and political concepts which have been steadily eroding its security and solvency?

And what can we do to help after the event . . . that is, when the nation, face to face at last, with the economic facts of life, will need help . . . real help . . . lots of help . . . in thinking and working its way out of its dilemma and back to political realism.

I have suggested as a SPECIFICATION FOR NATIONAL SECURITY, the ENGINEERING TYPE OF THINKING . . . the realistic, constructive kind of thinking that faces facts . . . recognizes facts for exactly what they are . . . and utilizes facts and facts alone in working out its projects.

Characteristically, some engineers are better suited for the exclusive pursuit of some phase of engineering. To that group, industry looks for men to make its designs, its machines, and to maintain the inventive flow that progressive America requires. Even those, however, can in their everyday contacts help to correct some of the political and economic fallacies so rampant today. Other engineers, and there are many, have a marked capacity for dynamic leadership. This leadership, so urgently needed by the nation, will find a natural outlet in active participation in civic affairs.

Your expressions of opinion are received in society with respect, whether these matters involve local politics, education, or general topics of the day. You have a very definite contribution to make because of your training.

The engineering profession holds a high place in the esteem of the peoples of the world. It can maintain and increase this esteem if its members enter more broadly into public and governmental affairs . . . at community, state and national levels.

The need for men of clear minds . . . the need for thoughtful, logical, forceful leaders . . . never was more apparent. We need these strong leaders today. They will be needed tomorrow and for all the tomorrows. They will be needed in industry, to be sure . . . but I urge you to raise your sights beyond the narrow confines of exclusively technical pursuits. Your responsibilities lie not alone in creating a better material world but in improving the political and spiritual climate of our beloved country.

Idaho Society of Professional Engineers—Annual Meeting. January 18 and 19. Hotel Boise, Boise.

Texas Society of Professional Engineers—Annual Meeting. January 24, 25 and 26. Buccaneer Hotel, Galveston.

Wisconsin Society of Professional Engineers—Annual Meeting. January 25 and 26. Hotel Schroeder, Milwaukee.

Professional Engineers of North Carolina—Annual Meeting. February 6.

Oklahoma Society of Professional Engineers—Annual Meeting. February 8 and 9.

New York State Society of Professional Engineers—Mid-Winter Meeting. February 8 and 9. Nelson House, Poughkeepsie.

Kansas Society of Professional Engineers—Annual Meeting. February 22 and 23. Townhouse, Kansas City, Kansas.

National Society of Professional Engineers—State Presidents' Conference. March 14 and 15. Statler Hotel, Cleveland, Ohio.

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(*Continued from page 6*)

equivalent to $7.50 to $14.00 per hour, in view of the prevailing $0.75 per hour minimum wage. If this wage differential is necessary in a totally regimented state, it seems unlikely that men can be made to flock to engineering for a fraction of that in a nation enjoying any degree of freedom.

The second proposition: "We must continue to expand—even if the engineers have to work in stock rooms during peacetime and at a low salary. Each engineer thus becomes a reserve in time of war. . . ."

Admittedly, engineers are a valuable national resource in time of war. And their value, like the soldier's, is less freely acknowledged in time of peace. The problem, then, is how can we induce enough men to enter engineering training during times of peace (and over-abundance of engineers) to ensure an adequate number during wartime which creates an artificial shortage of engineers. One method would be conscriptive training, with forced levees of men perusing texts under guard. It seems doubtful whether this would produce optimum professional competence. Another method is breaking down engineering into minute components and using partially trained men to fulfill these tiny divisions of labor. This method is currently in use in much of our aircraft industry and is a dismal failure. It is the direct cause of most of the current "shortage," since it takes about five of these "specialists" to equal one adequately trained engineer.

The method proposed by this writer is the passage of a "Professional Parity Act," which would set minimum wages to be paid for any and all engineering work done on or for a government contract. This Parity is at least as justifiable as the maintenance of a standing army in time of peace, and for the same reason. At the present time this minimum wage should be not less than $6.00 per hour, if the profession is to attract and hold competent men in sufficient numbers. Comment on this proposal would be appreciated by the writer.

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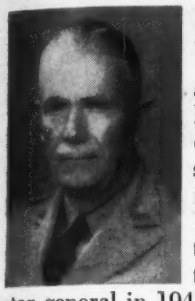
OUR AUTHORS

General Brehon B. Somervell, **(A Specification For National Security, page 8),** now President and Director of Koppers Company, Inc., was born in Little Rock, Arkansas in 1892. He graduated from West Point and was commissioned a second lieutenant in the Army in 1914 and advanced through the ranks to become a four star general in 1945.



During World War II, General Somervell made great contributions to the Allied war effort as Commanding General of the Army Service Forces. The task of keeping America's fighting forces supplied with the materials they needed to win fell mainly to him. General Somervell is a professional engineer and a member of the Pittsburgh Chapter of the Pennsylvania Society of Professional Engineers.

The details of General Somervell's brilliant career are too well known to require elaboration. The AMERICAN ENGINEER is proud to print his article.

John R. Dunning, Dean of the School of Engineering, Columbia University, **(Columbia's New Program, page 11),** received his A. B. degree from Nebraska Wesleyan in 1929, and his Ph. D. degree from Columbia University in 1934. He is a present member of the Board of Directors of the Oak Ridge Institute of Nuclear Studies, and was a Special Representative for "Operation Crossroads" at Bikini in July, 1946.

Among his professional affiliations are: Sigma Xi; Optical Society; National Academy of Sciences and the Society for Engineering Education.

Lt. General Leslie R. Groves, U. S. Army (Ret.), has said of Dunning: "Under his direction, the Columbia University Engineering Center should meet all of the hopes which we all hold for it. Nothing could be truer than General Eisenhower's statement at the time of the announcement of his appointment: 'We simply picked the man best fitted.'"

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EDITORIALS

The Heart of Christmas . . .

In this Christmas season of light and joy, the unselfish spirit of giving takes on its highest significance, enriching the holidays. Many of us regret that this general feeling of brotherhood is not carried throughout the year, but few take an active part in perpetuating the Christmas spirit.

Engineers have an opportunity to give of themselves to their fellow men throughout the year in many ways. The very nature of engineering is giving—striving to improve communications between peoples and designing new methods for the comfort and safety of their fellow men. Community service on the part of individual engineers is another way in which they can give of their talents to their fellow men. Engineering developments are an outpouring for mankind and the fruits of the profession are beneficially directed toward the public.

True giving is its own end, without expectation of reward. Two thousand years ago a Child came into the world and, having given unselfishly of himself throughout his life, his spirit has since filled countless lives with warmth and inspiration. If this spirit of giving could be embodied in the hearts of all the earth's people, then we would truly have "Peace on Earth, Good Will to Men."

The First Returns Are In . . .

Over 350 of the first questionnaires sent out by NSPE under its new Public Relations Program have already been returned. The subject of the questionnaire was: "How to Improve Engineering-Management Communications."

Although we have been optimistic about the project from the first, we must admit that we have been most pleased at the number of important executives who have taken time off from their duties to give careful thought to filling out the questionnaires and returning them. Many of them have been returned by executives whose companies employ many thousands of persons and hundreds of professional engineers.

The survey has been undertaken with an eye to making a serious contribution to the knowledge on the subject, and it is gratifying to note that industrial leaders are giving it their serious and wholehearted cooperation.

Even though all the returns are not yet in, the survey has already proved one thing: industry is interested in working with the engineering profession in a serious search for satisfactory answers to their mutual problems.

Human Rights Day . . .

The National Society of Professional Engineers has long had a pleasant connection with UNESCO and a deep interest in its work. The AMERICAN ENGINEER, therefore, is happy to participate in observing December 10 as "Human Rights Day."

The Declaration of Human Rights, setting up a standard of personal freedom not unlike our Bill of Rights in the American Constitution, has often been called a milestone in human history. The moral force of this Declaration has already been felt in many nations. The Declaration has had an influence on the new constitutions of Costa Rica, El Salvador, Haiti, Indonesia and Syria and has been cited as a precedent by courts in various countries.

Undoubtedly, America could never have achieved the eminence it has without the Bill of Rights, and we, as free men, could never have been so secure in our liberties without it.

Perhaps if there is a single mistake in the immortal Declaration of Independence it is this "*we hold these truths to be self-evident . . .*" The concepts of human dignity and of liberty and independence for the mass of the people are not self evident and never have been. More than half the people of the world live under a system of political semi-slavery. That is why Human Rights Day is important. We often become so wrapped up in the concerns of our workaday world that we forget those things which are most precious to us.

That is why we Americans should devote a little thought to the aims of the Declaration of Human Rights on Human Rights Day.

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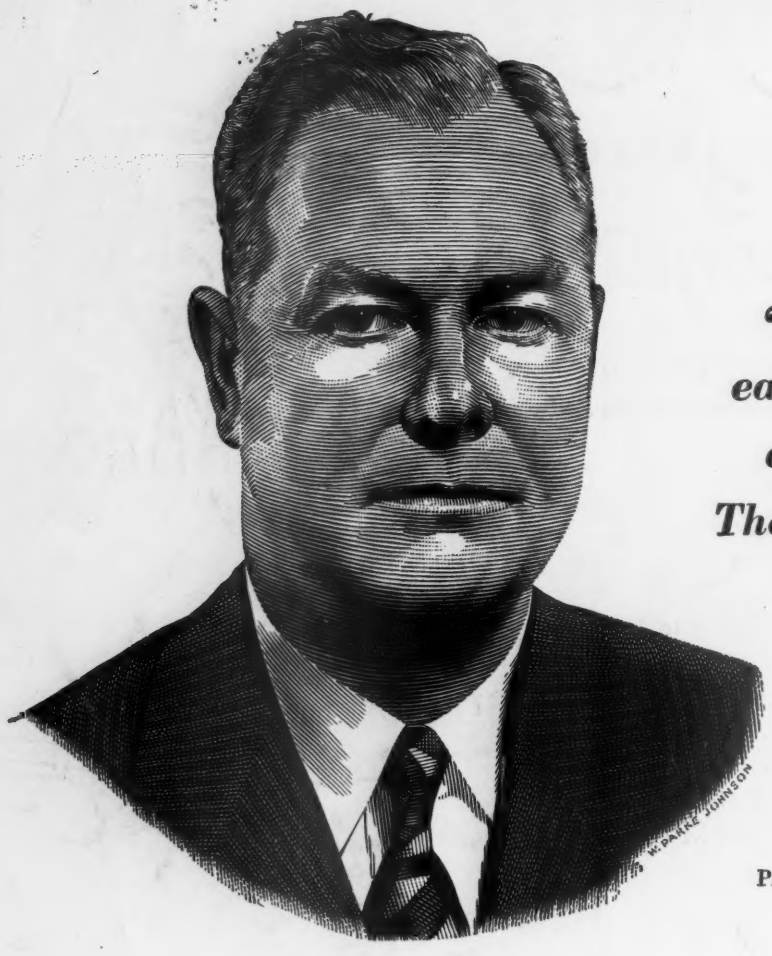

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